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NOTE

In the compilation of this guide, the editor has been ably assisted by

MR. STEPHEN R. L. FOSTER

During fifteen years "inside," Mr. Foster has explored, trapped, and kodaked widely. He has served as game and fur warden under the Department of the Interior, assisted materially in the location and construction of military telegraph lines, and acted as guide to important scientific expeditions; thereby acquiring an unusual intimacy with the various towns, lines of travel by railroads, over trails and on the great rivers.

The beautiful illustrations and text extracts from the copyright report of the Harriman Alaska Expedition—"Alaska"—are used by permission of Mrs. Edward H. Harriman to whom we extend our grateful acknowledgment.

We are also indebted to the Passenger Department of the White Pass & Yukon Route and to Mr. J. L. McPherson, manager, Alaska Bureau, Seattle Chamber of Commerce, for their cordial co-operation and assistance.

Statistics covering products, commerce, etc., are from latest official reports of U. S. Government, territorial, commercial, and publicity bureaus.

RAND McNALLY GUIDE

TO

ALASKA

AND

YUKON

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	Pop.		Pop.
Afognak*+†	308	Fort Lisicum*+†£×	153
Akiatsoak ¶	106	Fort St. Michael ¶	126
Akutan+†p	66	Fort Wm. H. Seward ¶†£	186
Amalga+†p		Fort Yukon*+††£R	319
(100) Anchorage*+††£×△	1856	(100) Fox Rp	
Andreafsky+†Rp		Franklin*+†R	
Angoon ¶	114	Funter p	
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Bettles+††£Rp		Holy Cross*+††£×	
Candle*R	91	Hoonah*+†	402
Chatanika*R		Hope*+†£R	
Chatham+†p		Hot Springs*+†£R	29
Chichagof*+†	172	Hydaburg*+†	346
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Cleary*†R		Katalla*£×	84
Copper Center*+†R	71	Kenai+†£p	332
N. (2) Cordova *+††£×△	955	(2) Kennecott*†£△	494
Council*†R	109	N. Ketchikan*+††£×△	2458
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N. (100) Fairbanks*+††£×△R	1155	Matanuska*+	
Flat*+†R	158	(2) McCarthy*£	127
Fortuna Ledge*+R		McGrath+†Rp	90
Fort Gibbon ¶+†£	181	McKinley Rp	

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SYMBOLS: N Incorporated town. p Postoffice. ¶ Not a postoffice.
 * Money order postoffice. + Postal telegraph. † Western Union
 Telegraph. ‡ American Ry. Express. £ Steamboat landings. × Inter-
 national money order office. Δ Postal savings. R Mail restricted
 during winter months. Figures in parentheses preceding names of
 towns indicate the railroad on which located: (2) Copper River &
 Northwestern Ry.; (100) U. S. Government R. R.

Apparent Time of Sunrise, Sunset, Beginning of Morning Twilight, and Ending of Evening Twilight (Computed by Arthur D. Kidder, General Land Office)

North Latitude

	55°	57°	59°	61°	63°	65°	67°	69°
January 1:	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
Twilight begins...	7:36 am.	7:44 am.	7:57 am.	8:14 am.	8:32 am.	8:51 am.	9:10 am.	9:30 am.
Sunrise.....	8:21 am.	8:34 am.	8:50 am.	9:08 am.	9:31 am.	10:02 am.	10:54 am.	Sun sets Dec.
Sunset.....	3:40 pm.	3:27 pm.	3:11 pm.	2:53 pm.	2:29 pm.	1:59 pm.	1:08 pm.	2, rises Jan. 11
Twilight ends....	4:25 pm.	4:17 pm.	4:04 pm.	3:47 pm.	3:29 pm.	3:10 pm.	2:50 pm.	2:30 pm.
February 1:								
Twilight begins...	6:57 am.	7:03 am.	7:09 am.	7:17 am.	7:27 am.	7:37 am.	7:49 am.	8:03 am.
Sunrise.....	7:39 am.	7:47 am.	7:56 am.	8:08 am.	8:21 am.	8:37 am.	8:56 am.	9:20 am.
Sunset.....	4:22 pm.	4:13 pm.	4:04 pm.	3:54 pm.	3:41 pm.	3:25 pm.	3:06 pm.	2:41 pm.
Twilight ends....	5:04 pm.	4:58 pm.	4:52 pm.	4:44 pm.	4:35 pm.	4:25 pm.	4:12 pm.	3:58 pm.
March 1:								
Twilight begins...	5:58 am.	5:59 am.	6:00 am.	6:01 am.	6:02 am.	6:04 am.	6:06 am.	6:08 am.
Sunrise.....	6:39 am.	6:43 am.	6:46 am.	6:49 am.	6:54 am.	7:00 am.	7:05 am.	7:14 am.
Sunset.....	5:22 pm.	5:19 pm.	5:16 pm.	5:12 pm.	5:08 pm.	5:02 pm.	4:55 pm.	4:49 pm.
Twilight ends....	6:03 pm.	6:02 pm.	6:02 pm.	6:01 pm.	6:00 pm.	5:58 pm.	5:57 pm.	5:55 pm.
April 1:								
Twilight begins...	4:53 am.	4:49 am.	4:44 am.	4:38 am.	4:32 am.	4:24 am.	4:14 am.	4:04 am.
Sunrise.....	5:30 am.	5:27 am.	5:25 am.	5:21 am.	5:19 am.	5:15 am.	5:11 am.	5:05 am.
Sunset.....	6:32 pm.	6:35 pm.	6:38 pm.	6:41 pm.	6:44 pm.	6:48 pm.	6:53 pm.	6:58 pm.
Twilight ends....	7:09 pm.	7:13 pm.	7:18 pm.	7:24 pm.	7:30 pm.	7:38 pm.	7:48 pm.	7:58 pm.
May 1:								
Twilight begins...	3:42 am.	3:31 am.	3:18 am.	3:03 am.	2:43 am.	2:17 am.	1:43 am.	Continuous
Sunrise.....	4:25 am.	4:17 am.	4:08 am.	3:57 am.	3:46 am.	3:31 am.	3:13 am.	2:50 am.
Sunset.....	7:36 pm.	7:44 pm.	7:54 pm.	8:05 pm.	8:16 pm.	8:30 pm.	8:48 pm.	9:10 pm.
Twilight ends....	8:19 pm.	8:31 pm.	8:44 pm.	8:59 pm.	9:19 pm.	9:45 pm.	10:19 pm.	Continuous

June I:													
Twilight begins.	2:17 am.	1:49 am.	1:05 am.	Continuous	Continuous	Continuous	Continuous	Midnight sun					
Sunrise.	3:17 am.	3:02 am.	2:40 am.	2:16 am.	1:40 am.	0:26 am.	Rises May 20						
Sunset.	8:43 pm.	8:59 pm.	9:20 pm.	9:44 pm.	10:21 pm.	11:30 pm.	Sets July 24						
Twilight ends.	9:44 pm.	10:12 pm.	10:56 pm.	Continuous	Continuous	Continuous							
July I:													
Twilight begins.	1:59 am.	1:24 am.	Continuous	Continuous	Continuous	Midnig't sun	Midnig't sun						
Sunrise.	3:05 am.	2:47 am.	2:25 am.	1:56 am.	1:08 am.	Rises June 1	Rises May 20						
Sunset.	8:55 pm.	9:13 pm.	9:35 pm.	10:05 pm.	10:51 pm.	Sets July 12	Sets July 24						
Twilight ends.	10:00 pm.	10:35 pm.	Continuous	Continuous	Continuous								
August I:													
Twilight begins.	2:58 am.	2:41 am.	2:20 am.	1:49 am.	1:00 am.	Continuous	Continuous						
Sunrise.	3:50 am.	3:38 am.	3:24 am.	3:07 am.	2:46 am.	2:18 am.	1:37 am.						
Sunset.	8:10 pm.	8:21 pm.	8:35 pm.	8:52 pm.	9:11 pm.	9:38 pm.	10:17 pm.						
Twilight ends.	9:00 pm.	9:17 pm.	9:38 pm.	10:09 pm.	10:37 pm.	Continuous	Continuous						
September I:													
Twilight begins.	4:09 am.	4:08 am.	4:04 am.	3:55 am.	3:40 am.	3:24 am.	3:06 am.						
Sunrise.	5:09 am.	4:54 am.	4:48 am.	4:42 am.	4:35 am.	4:26 am.	4:15 am.						
Sunset.	6:59 pm.	7:04 pm.	7:09 pm.	7:15 pm.	7:23 pm.	7:31 pm.	7:41 pm.						
Twilight ends.	7:49 pm.	7:50 pm.	7:54 pm.	8:03 pm.	8:18 pm.	8:34 pm.	8:51 pm.						
October I:													
Twilight begins.	5:33 am.	5:33 am.	5:32 am.	5:30 am.	5:28 am.	5:26 am.	5:23 am.						
Sunrise.	6:11 am.	6:12 am.	6:13 am.	6:14 am.	6:16 am.	6:17 am.	6:20 am.						
Sunset.	5:48 pm.	5:47 pm.	5:45 pm.	5:43 pm.	5:42 pm.	5:40 pm.	5:38 pm.						
Twilight ends.	6:25 pm.	6:25 pm.	6:27 pm.	6:29 pm.	6:31 pm.	6:33 pm.	6:35 pm.						
November I:													
Twilight begins.	6:40 am.	6:45 am.	6:50 am.	6:56 am.	7:02 am.	7:11 am.	7:21 am.						
Sunrise.	7:24 am.	7:31 am.	7:40 am.	7:49 am.	8:00 am.	8:14 am.	8:31 am.						
Sunset.	4:34 pm.	4:27 pm.	4:18 pm.	4:08 pm.	3:57 pm.	3:45 pm.	3:27 pm.						
Twilight ends.	5:18 pm.	5:13 pm.	5:07 pm.	5:01 pm.	4:55 pm.	4:47 pm.	4:37 pm.						
December I:													
Twilight.	7:33 am.	7:44 am.	7:57 am.	8:12 am.	8:28 am.	8:46 am.	9:06 am.						
Sunrise.	8:21 am.	8:35 am.	8:52 am.	9:11 am.	9:36 am.	10:13 am.	11:23 am.						
Sunset.	3:39 pm.	3:24 pm.	3:08 pm.	2:50 pm.	2:24 pm.	1:46 pm.	0:31 pm.						
Twilight ends.	4:35 pm.	4:16 pm.	4:03 pm.	3:48 pm.	3:32 pm.	3:14 pm.	2:54 pm.						

ALASKA LOCALISMS

Bedrock. Generally this means the solid rock of the earth's bed. In the "North" it means no pay until "cleanup."

Below. Used by the residents of the Alaska coast towns to indicate they are going to Seattle or Vancouver.

Cache. Locally pronounced cash. In Alaska structures are built in trees and on posts far enough above ground to protect the contents from storms, dogs, bears, and other wild animals, and out of reach of fires. These are "caches," places of safety. In everyday affairs the word is in frequent use as thus: "Câche this" (take care of this), and the place of safety may be a man's pocket or the kitchen cupboard.

Chechacko. A new arrival in Alaska, previously termed a tenderfoot. The word is from the Chinook language and it is freely applied to everything shipped into, and not raised in, Alaska.

Chinook wind. Warm wind from the south.

Cleanup. The final process in placer mining; the cleaning up of the sluice boxes, removing the gold, drying and removing the black sand by magnet.

Dust. Small grains of gold. In mining camps where gold dust is used as a medium of exchange, when purchasing an article the question is asked, "Will you pay in dust or in chechacko money?" This latter means gold, silver, and paper money coming from the States. At the store you will hear, "Are these 'chechacko' spuds or 'sourdough'?"

Interior. Used by Alaskans to mean north of the Alaska range of mountains.

Limit. A local expression which newcomers should know the meaning of. It is used in giving directions for travel or designating the locality of a place. Looking down a stream, the right-hand side is the "right limit"; the left-hand side the "left limit" of the stream.

Using the form "fork" when facing up a stream, all streams coming into it on the left are called "left forks"; those coming in on the right are "right forks."

Mucklucks. Water boots made by the Eskimos.

Mush. This is the "sourdough" word for walk. They never use the term "walk." "I mushed" means "I walked." When driving dogs, "mush on" means start; "mush" means go.

Niggerheads. Grass clumps growing as tall as three feet and located from one to three feet apart.

"North" The. Means north of the Alaska range of mountains.

Outside. This word, as used, means the States. In common language one hears this question, "Are you going 'outside,'" or "Do you intend remaining in the 'interior'?"

Overflow. Water flowing over the top of ice.

Parkay. Is used in the North in place of an overcoat. A slip-on having no opening front or back except at neck for putting on over head. It has a hood with only a face opening sewed on to the neck opening. The openings at face and arms have light fur trimmings and draw strings to close up as weather demands. They are made of various materials but those most easily obtained are made of denim or duck.

Placer. A mineral deposit, usually gold, not a vein; the name derived from the Spanish word meaning pleasure.

Quartz. Crystal rock.

Sluice box. A trough used in separating gold from the dirt and gravel in which it is found. This is accomplished by setting troughs on a grade (determined by the kind of gold) and turning on a flow of water which carries off the sand, etc., and leaves the gold.

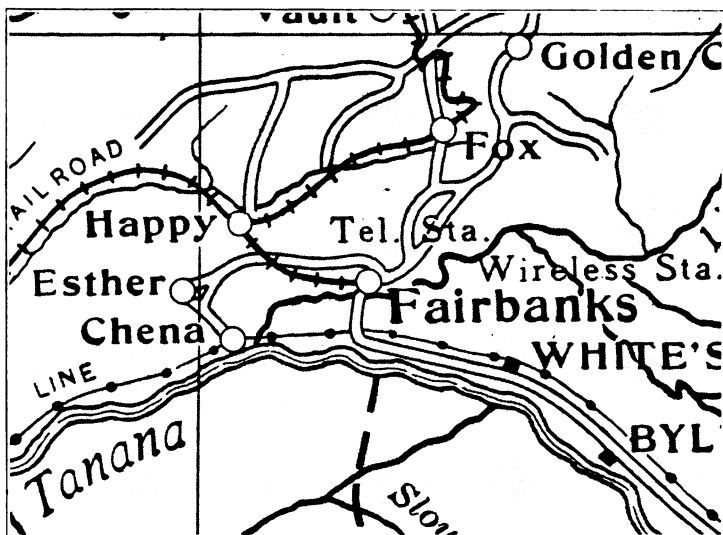
Siwashing. Camping without shelter of any kind except what can be constructed of brush, small trees, etc., or when lying beside a camp fire, unprotected by the weather.

Sourdough. Any one who has lived in Alaska a long time and who has seen the ice go out of the Yukon. Presumably derived from the dough used by the pioneers in making bread. It is sometimes used in reference to things grown, or which were originated, in the territory.

Tundra. Open timberless country covered with moss and niggerheads.



White Pass & Yukon R. R. Near Summit of White Pass, Alaska



The half-tone print of map hereon of Fairbanks, Alaska and vicinity is from a photostat enlargement of the region shown in the map on page 120 of this guide.

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THIS new railroad is located through the heart of the Territory; extends 467 miles from Seward, a port free from ice and open the year round to the navigable waters of the interior at Nenana and Fairbanks; with branch lines to Matanuska coal fields and through the Tanana Valley mining district around Fairbanks. Total mileage in operation, 540. Certain sections of railroad, while passable will still be under construction during 1922.

Trains run twice weekly in each direction, leaving Seward on Mondays and Thursdays; returning leave Fairbanks on Sundays and Wednesdays. Buffet observation cars, serving meals en route, are carried on trains south of Nenana.

The scenery throughout the line, particularly on the Seward section and crossing the Continental Divide, is probably superior to any railroad scenery on the North American Continent. The following are among the points of interest to tourists:

Seward on beautiful Resurrection Bay, surrounded by picturesque mountains, forests, and trout streams.

Spencer Glacier with its vari-colored ice masses pushing down within a few hundred yards of the railroad.

Anchorage—at the head of Cook's Inlet—the railroad headquarters and outfitting point for many trips of interest.

Government-operated coal mines at Eska and Chickaloon in the Matanuska coal fields.

Mount McKinley, monarch of North American mountains, tossing its snowy crest four miles in the air, visible for 300 miles on the railroad. Worth the trip from Seattle to see.

McKinley National Park, 3,000 square miles of untouched nature, the center of an unsurpassed wild game country, reached from McKinley Park Station (mile 347).

For further information write or wire:
Alaskan Engineering Commission,
Anchorage, Alaska.

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THE SCENIC ROUTE
AT THE TOP OF THE WORLD!**



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MOST
OUT OF
YOUR VISIT
TO
ALASKA

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Travelers Who Know
Go via the wonderful "inside" passage
TO SKAGUAY
No open seas to cross

THENCE VIA

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IN THE FOOTSTEPS OF THE GOLD SEEKERS OF
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Land of Gold, Romance and nightless days
Sail through the lakes in the mountains to
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Juneau, the Capital of Alaska

ALASKA AND YUKON

POPULATION of Alaska, 1920 census, 55,000—whites 30,000, natives 25,000; natives include "full" and "mixed" blood.

The name "Alaska" is derived from an English corruption of the native word Al-ay-ek-sa.

Population of Yukon Territory is about 9,000—and the proportion of whites and natives is probably the same as in Alaska.

The name "Yukon" is Indian for river. The territory was a part of Northwest Territory until 1898, when it was given a separate organization, and the name Yukon from the mighty river bearing the same name. Area 207,076 square miles.

Alaska in its greatest extent is included between the meridians of 130° west longitude and 173° west longitude, and between the parallels of 51° and 72° north latitude. It is bounded on the north by the Arctic Ocean; on the west by the Arctic Ocean, Bering Strait, and Bering Sea; on the south and southwest by the Gulf of Alaska and the Pacific Ocean, and on the east by the Yukon Territory and British Columbia.

Note: The region covered by this guide includes all of Alaska, a small section of the northwestern corner of British Columbia, and the Yukon Territory adjacent to the White Pass & Yukon Route. The topography, climatic variations, treasures of the earth, wild game, scenic wonders, etc., are of the same character over the entire region.

The longitude of the western terminal of the Aleutian Islands is almost identical with that of the New Hebrides Islands, and is the same as New Zealand. Cape Prince of Wales, the most westerly point of the mainland, is nearly as far west as the Samoan Islands.

Thus, a person traveling from New York to Attu Island, the westernmost of the Aleutian chain, on reaching San Francisco, will have accomplished less than half the journey from east to west.

Point Barrow, the northernmost point of the land, is more than 300 miles within the Arctic circle. The extreme southern point is in about the same latitude as Liverpool, Amsterdam, Hague, Glasgow, and Copenhagen. From north to south the



Klondike River from Ogilvie Bridge. Dredge "Canadian No. 4" in Foreground

Territory extends more than 1,000 miles of latitude, and from east to west over 2,500 miles of longitude.

That it is not possible to determine the climate of a country by simply noting on a map its distance north of the equator is demonstrated by the widespread error regarding Alaska. Alaska is not an Arctic Ocean province. About 70 per cent of the area of the Territory is in the North Temperate Zone. It has its mountain areas with their snow fields and glaciers—with the loftiest summits on the continent—and broad expanses of mossy tundra; but it has also wide areas of valley lands and timber and nearly as many varieties of climate as can be found in the Eastern and Middle States; controlled largely by the prin-

cipal mountain ranges and by the Japan Current, which has the same effect on the climate of Alaska as the Gulf Stream has on the climate of Great Britain, Ireland, and Norway.

When people in the States find on looking at the map that the bulk of Alaska lies north of Labrador, they conclude that the conditions of life must be infinitely worse up there than in Labrador.

As a matter of fact, the town of Fairbanks, although 1,500 miles north of New York, and 300 miles north of the southern tip of Greenland at Cape Farewell, has its farms, flowers, mines, electric lights, and all the other comforts of modern life. Here the total annual precipitation is about twelve inches; the mean summer temperature about 56° F.; annual, 25° F. The extremes recorded are — 65° F. and 100° F.

Scenic Alaska. Norway and Sweden are the Mecca and Medina of the European tourists, in search of the picturesque and sublime, and the latter country takes its annual toll of American pilgrims on similar sights intent; but Alaska discounts anything which these countries can boast.

Its mountains over-top Mt. Blanc, the Jungfrau or the Matterhorn; its glaciers dwarf the Mer de Glace and its puny associates; while the fiords of the Southeastern Archipelago do not suffer by comparison with those of Norway, whose grandeur has been embalmed in its sagas, and chanted by the annual procession of sightseers; while all its beauties can be seen from the deck of ocean or river steamer without the dust and discomfort of tedious railroad travel.

Unlike the glaciers of Switzerland and the Tyrol, which debouch on inland valleys, and give the observer but little evidence of their tremendous power and vitality, the energy of which must be left entirely to the imagination, the largest of the Alaska glaciers, like those in Greenland which give birth to the monsters of the Atlantic, terminate on the ocean border or interior rivers, with towering fronts from 200 to 300 feet in height and miles in width; fronts which are daily pushed forward by the titanic force of gravity, only to be undermined by the waves, broken down into avalanches of glittering particles or huge blocks which fall with a roar of thunder and throw the spray 100 feet into the air.

At the Childs glacier you may loll at ease by the river bank on a carpet of flowers, while the glacier splits with a noise like a cannon shot or the staccato reports of small arms, and watch avalanche after avalanche start 300 feet above, driving the water in mighty waves up the gravel slope below you as they take the final plunge and float away in the narrow river. When



Top—Dump of an Underground Drift Mine
Middle—Hydraulic Lift Used in Flat Country. Water under Pressure
Bottom—Placer Mining—the Early Method. Shoveling in by Hand

Photos by Frank H. Nowell

the mist has drifted by, the dead-white face of the ice disappears. The new dress glistens with the brilliancy of diamonds, and the deeper recesses of the facade gleam blue as a summer sky unflecked by clouds.

The charm of the glaciers is never ending. You may watch them hour by hour, and yet linger for some grander evidence of their power. Beginning as mist, kissed by the sun from the southern seas; drifted by the wind to the Northland; falling as snow on the mountain tops; welded with other infinitesimal fragments into an ice unit; crawling inch by inch a few feet annually; carving the solid earth with power irresistible, only at last to be torn in a moment of agony from its associates of a thousand, or many thousand years, and sent drifting south, the plaything of the sun and the waves; only to be resolved into its primary elements — is there not tragedy in the eternal cycle, repeated through the untold eons of the world's life?

There are sunsets among them such as no painter could ever put on canvas, veritable vortices of flame as though the world were on fire.

Along the Alaska Peninsula the tourist may witness in safety the tremendous pent-up energy of the internal fires; islands raised from the bottom of the ocean one year, only to be engulfed the next, as at Bogoslof.

Extending along the Alaska Peninsula is a chain of volcanoes; first Makushin, then Pogromni, Shishaldin, Pavlof, Katmai, Silvanoski, Iliamna, and Redoubt, rising majestically from 8,000 to 10,000 feet from the ocean level, with many others of lesser altitude.

These are the crowning peaks of a mountain range which, to the northeast, and north of Cook Inlet, culminates in Mount McKinley, thence extending eastward and southeastward, in Mounts Wrangell, St. Elias, and Fairweather and their cold, virginal sisters, grim guardians of the northern wonderland.

These stupendous mountain masses which at St. Elias line the coast for more than a hundred miles, are even more impressive than the loftiest of the world's famous peaks, either in the Himalayas or the Andes; for while these rise from lofty interior plateaus, the sweep of St. Elias is from ocean to sky, with nothing to break the foreground.

Surely the scenic beauties of Alaska, whether they be of earth or water or of sky, are varied enough to bring enthusiasm to the lips of the most blase traveler, ranging as they do from the sylvan groves of Sitka, which could satisfy even the most timid of lovers, to broad plains which whisper of peaceful

homes as the years go by; or from placid firds, where days drift idly by, to exhibitions of the titanic and implacable forces of nature in her most terrific moods. Vast as an empire, there can be no such thing as ennui in the everchanging panorama; distances are forgotten, and the traveler will soon begin to understand the lure of the North, that intangible something which makes the Alaskan, cramped amid the environment of civilization, repeat to himself, day by day, "I want to go back, and I will."—From "Alaska," published by Alaska Bureau, Seattle Chamber of Commerce.

The first explorations of the Alaska region were made by the Russians, Shirikov and Bering, in 1741. Trappers and fur traders entered the region, and in 1786 Gerassim Pribilof, a Russian fur hunter, discovered the Pribilof Islands, the breeding grounds of the Alaska seal. In 1778 Captain Cook surveyed part of the coast.

In 1799 a Russian American company secured the monopoly of the fur trade. In 1821 Russia attempted to exclude foreigners from the Bering Sea and this aroused a controversy which resulted in treaties by Russia with England and the United States, fixing the boundaries of the Russian possessions in America.

In March, 1867, Alaska was purchased from Russia for the United States by William H. Seward for \$7,200,000, the transfer taking place on the 18th of October of the same year. For the first ten years it was governed by the War Department.

In June, 1877, the War Department turned control over to the Treasury Department, and the Collector of Customs was chief executive. This arrangement lasted two years, when the customs officers, being unable to maintain order, control of Alaska was transferred to the Navy Department, which was in charge until the passage of the "Organic Act" in 1884.

This act, which provided for a civil form of government to be administered by a governor, has since continued,—the governor being appointed by the President of the United States for a period of four years.

In 1903 the boundaries with Canada were definitely fixed, by an agreement specifying that the sea coast of Canada be extended no farther north than 50° 40', and in 1906 Alaska was recognized as a territory.

By the act of May 7, 1906, Alaska was given power to elect a Delegate to Congress, and the act of August 24, 1912, provided for a Territorial Legislature.

The total area of the Territory is 590,884 square miles, or more than 375,000,000 acres. It is nine times the size of the State of Washington, which, in turn, is larger than all the

New England States combined. Alaska has 26,000 miles of coast line.

The main mass of Alaska is nearly rectangular and is carved out from the continent by the Arctic Ocean and Beaufort Sea on the north and the Gulf of Alaska on the south. An extension to southeast is furnished by the so-called panhandle of south-eastern Alaska, and to the southwest by the Alaska Peninsula and the Aleutian Islands.

The Territory has three peninsulas of considerable size—Alaska, Kenai, and Seward.

The Alaska Peninsula forms a broken barrier between Bering Sea and the Pacific Ocean.

The Kenai Peninsula, which is much smaller than the Alaska, and lies farther east, is separated from the mainland by Cook



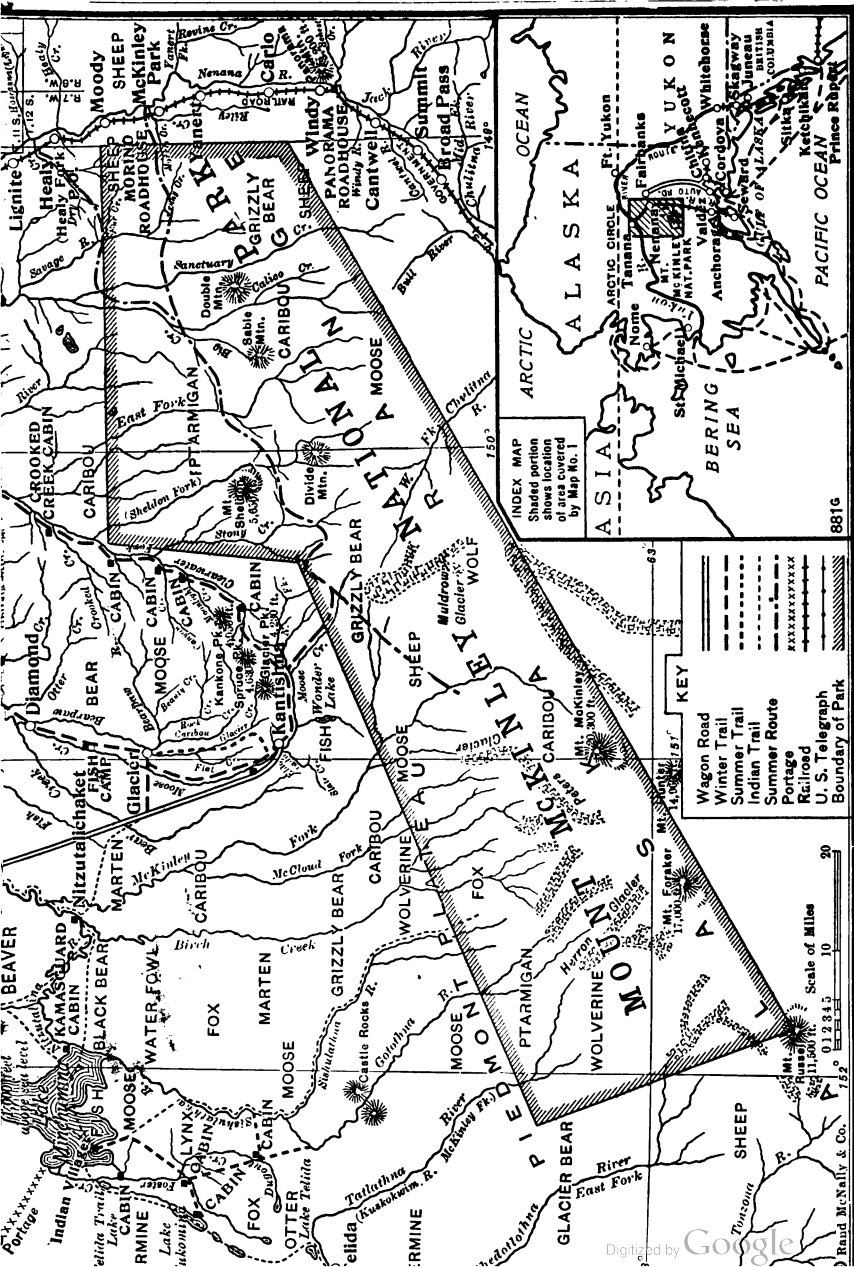
Dawson, Yukon Territory

Inlet on the west and Prince William Sound on the east, with Kodiak and the adjacent islands forming an extension to the southwest.

The Seward Peninsula, whose extremity marks the westernmost point of the continent, extends from the central part of Alaska, and is bounded on the north by Kotzebue Sound and the Arctic Ocean, and on the south by Norton Sound and Bering Sea.

The greater part of Alaska is taken up by the long stretch to the west of the Aleutian Peninsula and Islands, and the stretch to the south of the narrow southern peninsula.







Sitka Spruce

These Trees Are 37 and 39 Inches in Diameter

Along the coast lies the Pacific Mountain System, succeeded inland by a great plateau region marked by flat-topped ridges and rounded hills of almost uniform height; stream erosions having cut down the original level with the exception of these heights.

The Pacific Mountain System is made up of three coastal ranges and an inland range. In this latter is the loftiest peak in America, Mount McKinley, about 20,300 feet high.

In the Yukon Basin is an area of dead-level flats. Mountain masses rise out of the basin, except toward the Yukon delta on the west coast, where the plateau is generally unbroken and slopes gradually down to the sea.

The Rocky Mountain System is divided into two continuous ranges of inconsiderable altitudes. Beyond the Rockies is a plateau succeeded by a tundra-covered coastal plain region sloping down to the Arctic Ocean.

The Aleutian Islands are the crests of submerged peaks, forming part of the Alaskan Mountain System. Many of these peaks are volcanic, but all practically inactive.

"In considering the value of undeveloped resources of Alaska we must in part be governed by the reports of scientific investigators and study of pioneer development under like conditions. It has been only during the last few years that even the most optimistic would concede that Alaska would be a land of a permanent and prosperous people, simply because, as a people, we were not used to such climatic conditions as obtain throughout the northland, and we had in nowise grasped the extent of her enormous undeveloped, universal wealth and natural resources.

"It was only after a study of what had been accomplished under like conditions of climate by the sturdy races of Asia and Europe in countries that can in nowise compare with Alaska in mineral wealth and natural resources, that we realized the immense potentialities of our great northern Territory.

"A few comparisons will not, I think, be out of place. Norway, Sweden, and Finland in the same latitude as Alaska and



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Sitka Harbor



White Pass & Yukon R. R. in Sawtooth Mountains

with very similar climatic conditions have a combined area only two-thirds as great. They support a population of 10,000,000, as against approximately 55,000 (1920 census) for Alaska. These lands have no universal wealth other than iron — no coal, not near the area of arable lands, nor the wealth of fisheries with which Alaska has been so lavishly endowed.



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Foot Path Along Indian River, Sitka

"A prominent Alaskan Swede, who has been over a great portion of the northland, said, when talking of the possibilities of Alaska: 'If Norway and Sweden were one-half as rich in resources as Alaska, none of us would ever have left there.'

"Finland with an area of less than one-fourth the size of Alaska had a population in 1909 of 3,059,234.

"The total value of her products in that year was \$79,468,200, while that of Alaska in 1920 was \$75,306,986; population of 55,000.

"Finland has 2,444 miles of railway of which 2,214 were built and operated by the States. The gross receipts of the government railways in 1912 were \$10,317,780.

"Finland and Alaska are largely included between the parallels of 58° and 70° north latitude.

"Alaska is bordered on the north by the Arctic Ocean and Finland nearly touches the Arctic.

"The cultivated area in Finland comprised about 7,000,000 acres in 1901. In 1909 that country produced 19,759,488 bushels of oats, 12,084,853 bushels of rye, 4,887,319 bushels of barley, 19,226,108 bushels of potatoes, 7,766,203 bushels of turnips, and 2,895,087 pounds of flax and hemp.

"The output of butter was 26,585,600 pounds. The number of the principal domestic animals at that period was: cattle 1,491,264, sheep 904,447, swine 221,972, and horses 327,817."

—J. L. McPHERSON.



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Fort Wrangell, Alaska

Special local features divide Alaska into six natural subdivisions according to rainfall, temperature, and latitude.

First: Southeastern Alaska, 300 miles long by 125 miles wide, and the coastal region as far west as Cook Inlet, are characterized by heavy rainfall and moderate temperature. The average temperature for the three winter months is similar to that of Boston and New York. This region is heavily timbered, possessing many available garden spots and rank floral vegetation. In a narrow belt lying between the ocean and the Chugach Mountains, it extends westerly to Cook Inlet, and all its ports for the entire distance of 900 miles are open the year round to the commerce of the world.

Second: This region covering the southern coast of the Alaska Peninsula has a moderate rainfall and similar temperature, but it is almost timberless, the forests giving place to grazing lands. Like the first region, the harbors remain open during the winter.



Whitehorse, Yukon, in June



Copyright by E. H. Harriman

The Alaskan Salmonberry

Painting by Walpole

Third: This region covers the entire coastal district of Bering Sea, from Bristol Bay to Point Barrow and also the coast bordering on the Arctic Ocean, and is characterized by wide areas of tundra and treeless plains, but like many parts of Arctic Russia, is capable of supporting great herds of reindeer. In its 2,000 miles of coast line, the rainfall and temperature vary greatly, both diminishing as we go northward.

Along the shores of Bering Sea, the mean summer temperature varies from 40° F. to 50° F., and the mean annual temperature from 25° F. to 40° F. The extremes of temperature

recorded at Nome are about 77° F. in July and -38° F. in January. The precipitation is about 15 inches at Nome, 14 inches at St. Michael, and 36 inches at St. Paul Island.

The climate of the northern half of Bering Sea region is comparable with that of the Province of Archangel, in northern Russia, a region which supports some agricultural population. The Arctic provinces, which include the littoral of the Polar Sea, as well as the drainage basins of the tributary rivers, are similar to that of Bering Sea region, but colder.

At Point Barrow, the northernmost cape of Alaska, the mean annual is about 10° F. and the mean annual precipitation less than 8 inches.

The highest temperature recorded at Point Barrow does not exceed 65° F. and the lowest -55° F.

Fourth: The Copper River Valley, protected from the heavy rains of the coast by the lofty Chugach Mountains, possesses a comparatively dry climate with colder winter conditions; and is much less thinly timbered than the first region, lying to the south.



Dining Room of a Yukon River Steamboat

Fifth: The Kenai-Susitna region offers a compromise between the first and fourth regions, the rainfall being moderate and the average summer temperature about 54° F. Much of this region is heavily timbered and contains large areas of good farming land.

Sixth: This covers the central area, containing the great valleys of the Yukon and Tanana. Protected as it is on the south by the lofty Alaska Range with its extensive snow fields, it is well watered, although the average precipitation ranges

from only 13 to 20 inches, while the thermometer in summer climbs to 90° F., or over, in the shade; and the average summer temperature is about 58° F., or somewhat higher than any of



Cultivated Area at Beaver City, Alaska, on the Arctic Circle

the five regions, while the average of the low summer temperature is only slightly less than in Southern Alaska.

The total annual precipitation in the upper Yukon Basin varies locally from 10 to 16 inches, at Eagle 12 inches, at Dawson 13 inches, at Fort Gibbon, the mouth of the Tanana, about 14 inches. The snowfall in this district is from 3 to 5 feet. Some precipitation occurs on about 80 days in the year.

The precipitation on the lower Yukon and Kuskokwim is about 17 to 20 inches. The average summer temperatures



Alaska Indian Birch Bark Canoe

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are a little lower than at Fairbanks; winter temperature the same.

NEWSPAPERS AND PUBLICATIONS

Anchorage—	McGrath—
Anchorage Times—D and W	Kusko Times—B.W.
Alaska R. R. Record—W	Nenana—
Chitina—	Nenana News—D
Chitina Leader—W	Nome—
Cordova—	Nome Nugget—T. W.
Cordova Times—D	Petersburg—
Alaska Times—W	The Report—W
Alaska Churchman—M	Seward—
Douglas—	Seward Gateway—D
Douglas Island News—W	Skagway—
Fairbanks—	Daily Alaskan—T.W.
Fairbanks News-Miner—T.W.	Sitka—
Hyder—	Vestovian—M
Hyder Alaska Miner—W	Sitka Sun—M
Juneau—	Skagway—
Alaska Daily Empire—D	Daily Alaskan—T.W.
Alaska Capital—W	Valdez—
The Stroller's Weekly	Valdez Miner—W
Ketchikan—	Pathfinder—M
Chronicle—D	Wrangell—
McCarthy—	Wrangell Sentinel—W
McCarthy News—W	
SYMBOLS: D—Daily. T. W.—Tri-weekly. W—Weekly.	
M—Monthly. B. W.—Bi-weekly.	

TERRITORIAL BANKS

I Ketchikan	I Juneau	I Valdez	I Iditarod
I Wrangell	I Skaguay	I Seward	I Nome
I Petersburg	2 Cordova	2 Anchorage	I Hyder
I Douglas			

NATIONAL BANKS

I Juneau	I Seward	I Fairbanks
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A Salmon Packing Plant, Where the Great "Iron Chink" is Operated

WASHINGTON-ALASKA MILITARY TELEGRAPH SYSTEM

The United States Signal Corps operates all telegraph lines in Alaska, except certain private wireless plants which connect with the government lines. All business to and from "outside" is handled by the commercial lines at Seattle.

During the summer months communication is kept up with radio stations maintained by the various companies engaged in fisheries. The system comprises 2,676 statute miles of submarine cables and 799 statute miles of telegraph lines.

LIST OF STATIONS IN ALASKA

	Pop.		Pop.
Beaver Dam ¶ + † □		Kotlik ¶ † £ ○	83
Birches △ □		Kogukuk ¶ + † £ □	124
Brooks ○		Loudin □	64
Chena ¶ + † £ □	29	McCallum ¶ + † □	
Circle* + † £ ○	96	McCarthy ¶ † □	
Copper Center* + † □	71	McGrath + † ○	90
Cordova* + † £ △ ○ ★	955	Melozi □	
Craig* + † ○	212	Nenana* + † £ □	634
Donnelly ¶ + † □		Nome* + † £ ○	852
Douglas* + † £ △	919	Nulato* + † £ ○	258
Fairbanks* + † £ ○ □	1155	Paxon □	
Fort Egbert ○ □		Petersburg* + † £ △	879
Fort Gibbon ¶ + † £ ○ □	181	Richardson + † □	
Fort Liscum* + † £ ★	153	St. Michael* + † £ ○	371
Fort Yukon* + † £ ○	319	Salcha □	
Gulkana + † □		Seward* + † £ △	652
Haines* + † £ △	314	Sitka* + † £ △	1175
Hogan □		Skagway △* + † £	494
Holy Cross* + † £ ○		Tiekhell □	
Hot Springs* + † £ □	24	Tolovana ¶ + † £ □	
Iditarod ○	50	Tonsina ¶ + † □	
Juneau* + † £ △	3058	Valdez* + † £ △ □	466
Ketchikan* + † £ △	2458	Wortmans ¶ + † □	
Kokrines + † £ □	80	Wrangell* + † £ △	821

SYMBOLS: ¶ Not a postoffice. * Money order postoffice. + Postal telegraph. † Western Union Telegraph. ‡ American Ry. Express. £ Steamboat landings. □ Telegraph. ○ Radio. △ Cable. ★ Telephone.

TELEPHONE SERVICE

Telephone connection is open to the public between all stations on the U. S. Government R. R.

Fairbanks local service includes all creeks in the district.

There is 'phone service between Hot Springs, Rampart and Tofty.

NAVAL COMMUNICATION SERVICE

There are at present nine naval radio stations in Alaska, namely: St. Paul, St. George, Dutch Harbor, Kodiak, Seward, Cordova, Sitka, Juneau, and Ketchikan.

The naval communication service handles commercial traffic to any and all points that are served by the radio stations. The rates have been made the same for both the cable and radio. This uniformity of rates makes it very easy to route the traffic via radio in case of a cable break or by cable in case of a radio breakdown.

In general the Alaska stations handle mainly commercial traffic and government traffic of Class B. All commercial traffic is domestic count, 10-word minimum. The rates for southeastern Alaska, such as Juneau, Ketchikan, and Sitka, are 10 cents a word, 10-word minimum.

For Cordova and Seward the rate is 15 cents a word, 10-word minimum. For southwestern Alaska, such as Kodiak, Dutch Harbor, and the Pribilofs, the rate is 19 cents a word, 10-word minimum.

At present all traffic for points east of the 138th meridian is routed through the Astoria-Ketchikan circuit. This is the old Marconi spark circuit. All traffic to points west of this meridian is routed via the Keyport-Cordova arc circuit.

All the Alaska stations are spark stations except that Cordova and St. Paul have both arc and spark installations.

ALASKA COMMERCE SINCE 1867

Minerals—	1867-1919	1920	1867-1920
Imports.....	\$ 486,466,906	\$ 38,418,473	\$ 524,885,379
Exports.....	939,365,741	68,990,681	1,008,356,422
Total.....	\$1,425,832,647	\$107,409,154	\$1,533,241,801



Hydraulic Operations

PRODUCTS OF ALASKA

Minerals, 1867-1920—Gold.....	\$319,664,993
Copper.....	126,926,096
Other.....	13,639,916
	<u>\$460,231,005</u>
Fish, 1867-1920—Salmon.....	\$410,703,353
Other.....	44,700,039
	<u>\$455,403,392</u>
Furs, 1867-1920—Sealskins.....	\$60,195,226
Other.....	30,325,820
	<u>\$90,521,046</u>
Woods, curios, reindeer, etc.....	\$2,200,979
Total.....	<u>\$1,008,356,422</u>

COMMERCIAL BODIES IN ALASKA

Anchorage Chamber of Commerce.....	Anchorage
Brooks Commercial Club.....	Brooks
Cordova Chamber of Commerce.....	Cordova
Fairbanks Commercial Club.....	Fairbanks
Haines Chamber of Commerce.....	Haines
Hyder Commercial Club.....	Hyder
Iditarod Commercial Club.....	Iditarod
Juneau Commercial Club.....	Juneau
Ketchikan Commercial Club.....	Ketchikan
McCarthy Chamber of Commerce.....	McCarthy
Nenana Commercial Club.....	Nenana
Nome-Seward Chamber of Commerce.....	Nome
Petersburg Commercial Club.....	Petersburg
Ruby Commercial Club.....	Ruby
Seward Chamber of Commerce.....	Seward
Skagway Commercial Club.....	Skagway
Talkeetna Commercial Club.....	Talkeetna
Valdez Chamber of Commerce.....	Valdez
Wrangell Chamber of Commerce.....	Wrangell

**Agriculture at Fairbanks, Alaska**



Copyright by E. H. Harriman

Kodiak Bear

Painting by Charles R. Knight

RESOURCES

Agriculture is yearly becoming more and more an established industry. Already the Matanuska and Tanana districts are furnishing practically all the vegetables required for local consumption. Forage for horses and cattle is being grown, and even wheat, which it was at one time thought impossible to mature, is, through the efforts of the agricultural experiment stations, now a regular crop. Fairbanks has the first flour mill to be built in Alaska, and it will be only a few years before that district will be supplying the whole of the interior and the towns along the line of the government railroad with flour.

The average yield of wheat at Fairbanks is 19.6 bushels to the acre. The farmers there are commencing to organize for the purpose of co-operation in buying machinery and equipment.

The sugar-beet industry is worthy of consideration for Alaska. The Alaska beets contain a larger percentage of sugar than do the beets of the States, and can be worked during the winter months without refrigeration, which is most desirable.

An established sugar-beet factory in the vicinity of Anchorage would be able to draw on the Matanuska Valley, the whole line of the railroad and Cook Inlet for the needed supply.

The live stock industry has hardly progressed beyond the demands for dairy products, but eventually beef cattle will be grown in many parts of the Territory.

The growing of live stock should be encouraged by the loan of blooded cattle to the farmer for a period of years under





regulations to insure proper care. A return to the Government to be made in kind for issuance to other stock growers.

At Holy Cross mission a herd of twenty-five dairy cattle is kept and fed exclusively on swamp grass and red top made into hay and siloed.

For more detailed information, those interested are advised to write to the U. S. Department of Agriculture, Washington, D. C., for the latest publications relative to Alaska investigations.

Most of the homesteads are located in the Matanuska and Sustina valleys along the line of the government railroad; in the Cook Inlet region in the Tanana Valley in the interior, and in Chilkat and Eagle river valleys of Southeastern Alaska.



Main Street of Juneau, Alaska

The principal crops are turnips, potatoes, and other root crops. All the hardier grains mature in the Tanana Valley.

Competent authorities estimate that approximately 100,000 square miles of valley lands with their adjacent low foothills are available as arable and grazing lands, comprising the valleys of the Yukon, Tanana, Susitna, Copper River, and portions of the Kuskokwim, with less areas on the minor streams; as well as a considerable portion of the Kenai Peninsula, and the Alaska Peninsula, including its adjacent islands.

The prospective farmer must look for his profits to a diversified product, which shall furnish his table with the necessary things of life, and sell the remainder to near-by purchasers. It should be clearly understood that for the present, at least, farming must partake more or less of the character of market gardening around the mining centers, gradually expanding as these industries grow.

The consensus of opinions by those who have made a special study of the subject in all its aspects, not only in theory, but by actual experience on the ground, is that many thousands of Europe's population would gain by change of residence, especially those living in similar latitudes under similar conditions.



**Top—Atlin Inn on the Farther Shore
Bottom—Lake Atlin, B. C.**



Dawson, Yukon, Public School

Grain Crops and Grasses. That oats, barley, wheat, and rye can be grown successfully has been demonstrated at the experimental stations in the Yukon-Tanana valleys and also by the farmers around Fairbanks and in the Susitna Valley, who have cut barley for hay giving three tons to the acre. Much time has been devoted to the study and growth of all kinds of grain from northern countries and the end is not yet. In the rooms of the bureau may be seen handsome sheaves of all these grains and their cleaned products, 60-day and Finnish oats, as well as hull-less and beardless barley. There are also handsome samples of wheat, but this is a more tender grain. It has been demonstrated by the farmers around Fairbanks in the Tanana Valley that hard wheat can be matured, and wheat raising by them has passed the experimental stage. The winter-sown grain does well if covered by snow, but it is liable to be frost killed on ground swept bare by the wind.

It is no new thing to grow these cereals in northern countries as they mature rapidly. At Uleaborg, Finland, in the same latitude as Fairbanks, oats, barley, and rye are staple crops and are also largely grown in Northern Russia, requiring only from seventy to eighty days from seed to maturity. It is not the intensity of the winter cold which governs their successful growth. The great point is the date at which the ground attains a sufficient warmth to cause the seed to germinate



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Eskimo Boy and Girl, Port Clarence, Alaska

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(42° for wheat) and a sufficient time thereafter to mature it. Most persons overlook that long winter hours involve long hours of daylight in summer—for all parts of the world receive the same total hours of daylight, though differently distributed in the course of the year. The rapid growth of grain applies also to grasses.

Timothy springs up wherever imported hay has been fed to stock and also seems to be richest in nitrogen among its congeners. It grows everywhere but is said to rebel against annual cutting, so that cropping every other year is recommended.



Currants and Raspberries at Skagway, Alaska

Persons desiring detailed information on hay-making in South and Southeastern Alaska should consult Bulletin No. 3—Alaska Agricultural Experiment Stations, entitled "Haymaking at Kenai Experimental Station, 1907," etc.

Vegetable Crops. It is possible to grow magnificent vegetables in all parts of Alaska except on the tundras and mountains. To Alaskans they are no novelty but to strangers unacquainted with the country they are a constant surprise. They include all the products of the temperate zone in America, and the bureau has in its exhibit potatoes, turnips, beets, rutabagas, sugar beets, carrots, parsnips, kohlrabi, celery, rhubarb,



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Alaska Heather in Bed of Reindeer Moss



Dead Horse Gulch Near Summit of White Pass, Alaska

radishes, onions, cabbage, cucumbers, peas, tomatoes, and in one or two very favored spots even melons have ripened. The samples both for size and quality will compare with the markets of New York.

Twenty-seven varieties of potatoes were cultivated during the season of 1911, of which three were planted on June 1, nine on June 9, and the remainder on June 10. They matured between September 11 and 22, with a yield at a rate varying from 7,260 to 18,876 pounds per acre on the experimental plats. In the open field three varieties produced five tons per acre after sorting and grading on second year unfertilized ground.

Cabbages from department seed made heads weighing from eight to twelve pounds. Cauliflower was as fine as grown in any country.

Gratifying results have been obtained from experiments with sugar beets at Matanuska where tests showed beets containing from 14.6 to 16.9 per cent sugar.

Summing up the question, C. C. Georgeson, the best of all authorities, says: "All these vegetables can be grown and are grown as far up as the Arctic circle and beyond.

"This is not saying that they can be grown with equal success in all places and in all conditions, for on this point the elevation, rainfall, soil and local conditions as to climate are important factors. Nor do I say that there is not now and then a

cold summer, in which only the hardiest of these things make satisfactory growth. But under normal conditions and with good culture all of these vegetables are grown successfully even beyond the Arctic circle."

So much interest is expressed by visitors as to why it is possible to grow good vegetables so far north, when it cannot be done on the Atlantic shores in like latitudes.

Undoubtedly the first factor is the enormous volume of cold water brought down the Atlantic shores by the streams from Baffin's Bay and the coasts of Greenland and the presence of the Japan Current on the shores of the Pacific.



Cordova, Alaska

Except for these factors, all other conditions are equal as far as latitude or distance from the equator is concerned, as this affects only the length of the day. The local factors are the depth to which the ground is frozen, the annual precipitation of rain and snow, the number of days on which the sun shines, and the summer temperatures.

These have a greater influence on vegetable growth than extreme cold in winter, as for instance, in the wheat fields of Canada the mercury may go to 50 degrees below zero without detriment to the yield.

In the Tanana Valley the ground is deeply frozen; the day is 22 hours long at mid-summer; the average number of days without rain to exceed one-hundredth of an inch is about 270, and the total annual precipitation from 12 to 14 inches.



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Painting by Walpole

Alaska Columbine

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Administration Building, Dawson, Yukon Territory

But as the ground thaws out under the influence of the long days the tender roots of the seedlings follow the released moisture and are perpetually sub-irrigated. The frozen subsoil takes the place of the ordinary underlying rock or gravel in more southern localities, and being impermeable, all the products of vegetable decay are retained in the surface stratum, producing a soil rich in "humus" or leaf mold and eminently adapted to the growth of plant life. This is suggested as a possible explanation.

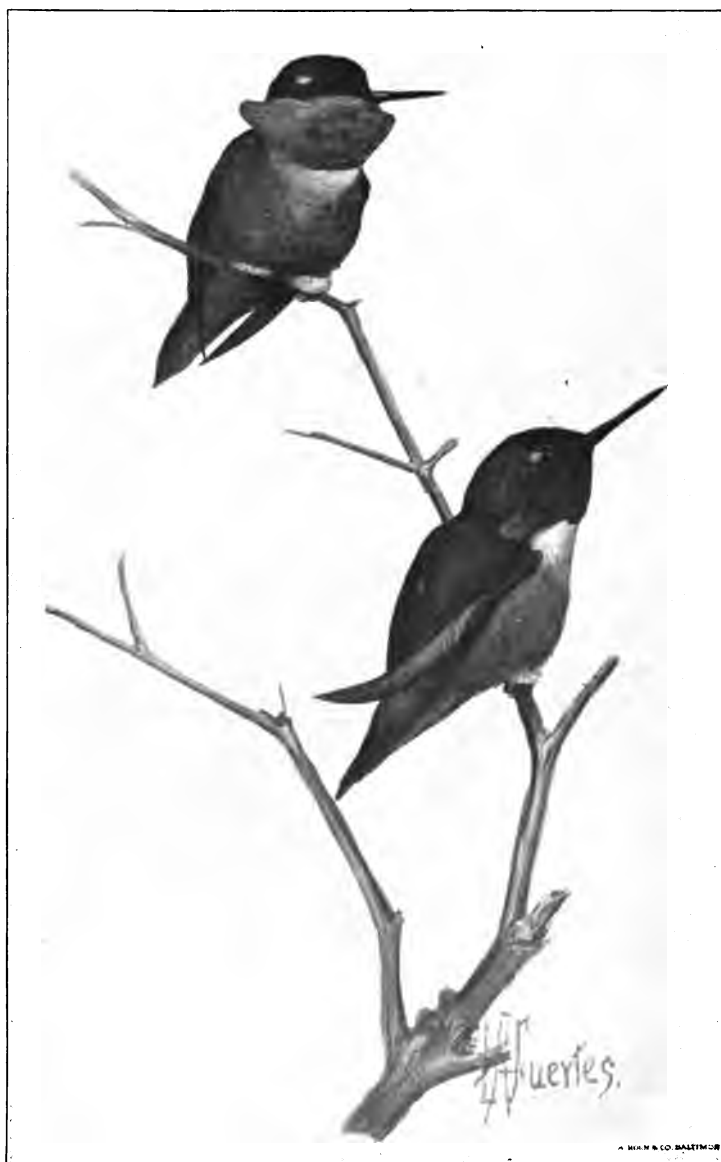
Wild Fruits. Alaska is a land of berries, not only in the profusion of fruit, but in the great variety of species.

Currants, both red and black, abound in Southeastern Alaska, and in lesser degree elsewhere, and both are remarkable for the size of the fruit and the length of the bunches, rivaling, if not excelling, the best of the cultivated forms.

Strawberries, of good size and excellent flavor, abound in and on the coast belt from Yakutat to the Copper River delta, and have been crossed with cultivated varieties, producing plants of more luxuriant growth than either of the parent forms both as to foliage and fruit. Some hundred varieties of these hybrids are under cultivation at the government experimental stations.

Raspberries are characteristic of the interior regions, especially of the Yukon and Tanana valleys.

Blueberries are universally distributed and fruit in profusion, the berries attaining a diameter of half an inch. So abundant are they that two ladies near Nome put up 119 gallons in one season.



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Rufous Humming Birds, Alaska

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Huckleberries abound through the Pacific Coast and interior regions, and form attractive pasturage for bears, both black and grizzlies.

Cranberries, both high and low bush, are characteristic of the interior plateau and Seward Peninsula.

Salmon berries grow luxuriantly in all the coast regions bordering on the Pacific Ocean.

The immense profusion of some of these berries in some localities suggests an opening for their use commercially as canned products and preserves, especially in the case of the blueberries, huckleberries, and currants, which for size and flavor are unsurpassed anywhere.

Cultivated Fruits. Nearly all the hardy fruit bushes do remarkably well in Southeastern Alaska, and the currant and raspberry also do well all over the interior. The same may be said of the strawberry in a more limited degree as to localities.

Gooseberries do well in the Pacific Coast belt, but it seems probable that blackberries, dewberries, loganberries, and grapes will not thrive in Alaska, for while experimental plants have lived for several years, they never fruited.

Experiments with apples, plums, and cherries have not been eminently successful up to this time, although there is a native crabapple growing extensively in some sections, especially the Susitna Valley. The Sitka experimental station reports a small degree of success with apples and cherries, but none with plums.



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Baskets Made by Eskimos, Port Clarence, Alaska



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Sunset on Muir Inlet, Glacier Bay, Alaska

CATTLE, SHEEP, AND HORSES

Cattle. While the government experimental stations at Sitka, Kenai, Copper Center, Rampart, Tanana, and Fairbanks have been devoted to the study of vegetable life, the station on Kodiak Island turned its attention to the study of farming stock, particularly cattle and sheep, to determine the types best suited to the climatic conditions, as a source of beef as well as dairy products. That stock can be raised from the Yukon Valley southward during the summer is well known to all old Alaskans who have seen herds driven over the trails and roads leading to the interior, living on the native fodder and reaching their destination in good condition. Cows for dairy purposes are kept near all the principal towns and at many of the road houses. The experimental stations are not simply trying to prove this fact—they are looking for stock which will require a minimum of winter feeding, and in this they have succeeded to a marked degree; so that we may look forward to herds ranging over the Alaska Peninsula and its adjacent islands as well as over the plains of Montana. The winter temperatures are infinitely less severe than on the high cattle ranges of the Middle West, native grasses are abundant and nutritious, and there seems no reason why Alaska in a few years shall not be able to supply its own fresh meats. This whole region lies practically south of the southern tip of Norway, yet dairying is one of the

principal industries of that country. The cattle in Norway, however, are said to be of an inferior breed and the chief object of the experimental stations has been to find better strains, and the adaptability of the native grasses for winter feed, such as hay and ensilage. The latter is an important item in regions where haymaking may be interfered with by rain.

As Alaska grows, more cattle will be kept in the vicinity of the towns, where barley, oats, and timothy will be grown for hay and ensilage, supplemented by root crops, as in other countries.

A large part of the added cost of keep will be returned in the value of the manure and the maintenance of the fertility



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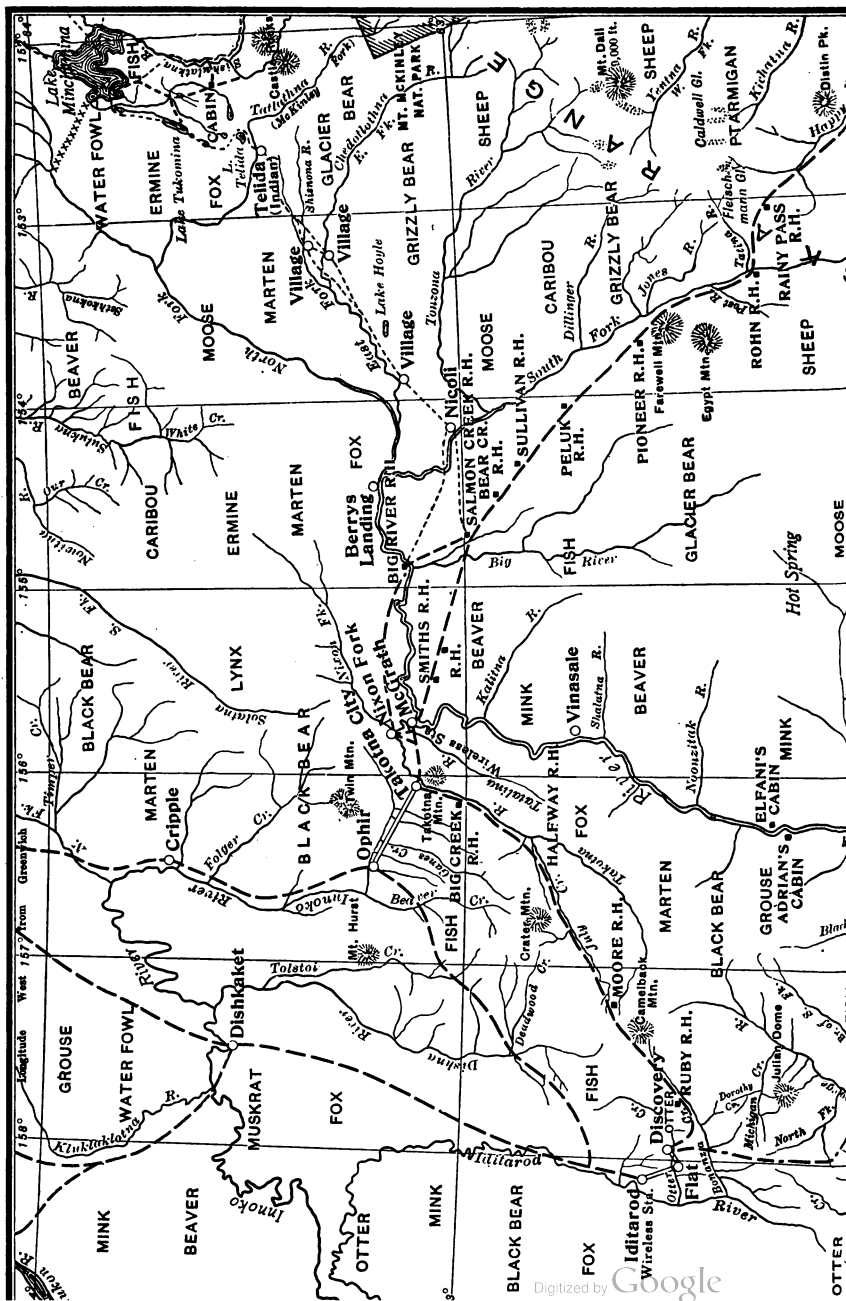
Greek Church at Sitka, Alaska

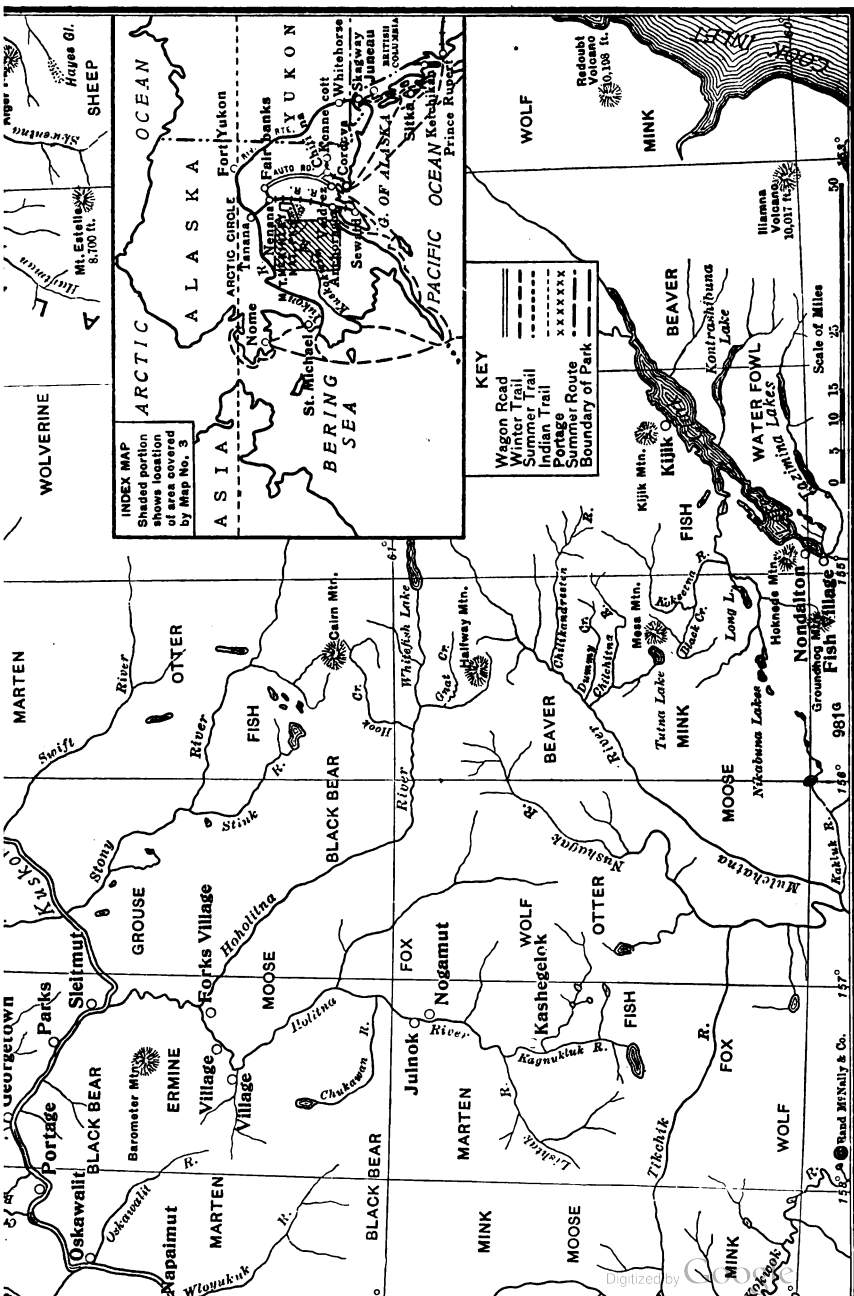
of the soil. Unquestionably the silo will be an essential feature in the equipment of every farmer in Alaska.

Sheep. The sheep on Kodiak and Raspberry Islands have also done well, experience showing that the long-haired breeds are best adapted to the moist coast climates, as the fleece sheds the rain more rapidly than the thick, short wool of the others. On Raspberry Island near Kodiak there is a band of 500 or more doing well.

Horses. Horses are in universal use in all parts of the territory, both as draft and pack animals, their more extensive use being limited chiefly by the absence of good roads.

Where such exist they are used on the winter stage lines and may be utilized in summer by the farmer when these routes are closed. Abundance of hay and grain may be raised







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Painting by Fuertes

Hyperborean Snowflake, Alaska

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in the interior for winter use. One hundred and seventy-five horses form the equipment of the White Pass Route from Dawson to Whitehorse, and so far as their ability to stand the climate is concerned, the only difference lies in the greater length of the winter months in the North, involving more winter feeding; this again being offset by the higher prices obtained for their labor.

The small, tough ponies so common in Norway have not yet been introduced, although they fill so useful a place in that country and ought to be easily acclimated.

ALASKA HOMESTEAD LAW

The United States General Land Office, Washington, D. C., issues circulars descriptive of the Homestead Laws. Intending settlers should secure this information.

ADVICE TO HOMESTEADERS

Intending settlers must remember that the entire white population of Alaska at this date is equal to only that of a small town in the United States (some 30,000, according to the latest estimates), and that it is widely scattered, the centers of population being chiefly along the coast or on the banks of the great interior rivers.

Settlements should, therefore, be first made where the inhabitants of these towns can be supplied, and at least a portion of the produce of the farm should be of such a character as to bear the cost of export charges. This indicates diversified farming, with the production of eggs, butter, cheese, and live stock for export, and in time the canning of small



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Dutch Harbor, Unalaska Island, Alaska



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Willow Ptarmigan, Alaska

fruits, peas and beans, etc., all of which grow luxuriantly and of a quality not surpassed in the western states. Crops of grain, peas and vetches can be converted into pork. Long wool sheep will furnish wool, and surplus stock takes the place of that now imported annually as dressed meat.

Fur Seals. The Commissioner of the Fisheries has stated the take of seal and fox skins from the Pribilof Islands for 1917 and 1918 netted the Government \$6,400,000. Under careful governmental supervision the herd, at one time on the verge of annihilation, has increased to about 525,000 animals, which inhabit the waters of Alaska during the summer season.

It is estimated that each seal kills at least two tons of fish each year. Consequently, of a total of 1,050,000 tons of fish killed each year by the herd, 450,000 tons may be called Alaska fish. If this is so, it would seem a wise policy on the part of the Government to make a thorough investigation, and perhaps not to allow the herd to increase to a number in excess of half a million.



Top—Potatoes, Near Dawson, Yukon Territory

Bottom—Oats, Hunker Creek, Yukon Territory

CENSUS OF THE SEAL HERD

Class	1916	1917	1918	1919
Harem bulls.....	3,500	4,850	5,344	5,158
Breeding cows.....	116,977	128,204	142,915	157,172
Surplus bulls.....		8,977	17,110	9,619
Idle bulls.....	2,632	2,706	2,444	2,239
Six-year old males.....	11,167	15,397	13,755	8,991
Five-year old males.....	15,494	14,813	11,941	5,282
Four-year old males.....	15,427	16,631	7,144	5,747
Three-year old males.....	19,402	19,507	9,117	13,596
Two-year old males.....	24,169	26,815	30,159	33,081
Yearling males.....	33,645	38,013	41,596	46,449
Two-year old cows.....	24,245	26,917	30,415	33,287
Yearling cows.....	33,646	38,018	41,608	46,447
Pups.....	116,977	128,024	142,915	157,172
	417,281	468,872	496,433	524,240

ALASKA FISHERIES

Number of persons employed in 1919 was 28,803, of which 16,326 were classed as whites, 3,875 as natives, 2,770 as Chinese, 1,507 as Japanese, 1,578 as Filipinos, 1,891 as Mexicans, and 587 as miscellaneous.

Total investment in 1919.....	\$74,181,560
Total value of product.....	50,282,067
Invested in salmon canning—total.....	66,475,171
Invested in salmon canning, South East Alaska..	33,741,891
Invested in salmon canning, Central Alaska.....	12,897,947
Invested in salmon canning, Western Alaska....	19,855,333
Value of canned salmon.....	43,265,349
Investment in herring fishery.....	900,572
Value of product.....	1,819,538
Investment in halibut fishing.....	1,979,457
Value of product.....	1,550,605
Investment in codfish fishing.....	1,286,075
Value of product.....	852,990
Investment in whale fishing.....	1,790,867
Fur—seal service—skins sold 19,157; value....	\$1,501,603.50

Fish. The fishing industry of Alaska, measured by the value of its products, stands first among its industries. It is represented chiefly by five specific branches, the most important of which is the salmon fishery, with halibut in second place; herring, third; cod, fourth; and whaling, last.

Salmon. There are five species of Pacific salmon, all of which are taken in Alaska waters. Fishing operations are carried on along practically the entire coast of Alaska from Dixon entrance northward to Kotzebue Sound, an arm of the Arctic Ocean. The most important species commercially is the red salmon. The salmon are widely distributed and ascend most



Top—Five Finger Rapids, Yukon River in Yukon

Bottom—Victoria Rock, Yukon River

all the larger rivers of Alaska. Two-thirds of the catch, however, is made in Southeastern Alaska, the greater proportion being taken in fish traps.

Four salmon hatcheries were operated in Alaska in 1919, the annual capacity of which was approximately 280,000,000 red



Typical Road Houses of Alaska

salmon eggs. The total take of red salmon eggs in 1919 was 119,060,000, in addition to which 3,660,000 humpback salmon eggs were also taken.

It is said salmon return to the place where they were spawned. After thirty months at sea, during which time nothing is known of them, they are drawn there by some mysterious instinct. From 300 to 400 eggs to each pound of parent fish is the average

spawn. Spending most of their time in salt water, the salmon in summer run up the fresh-water streams as far as they can, and there deposit their eggs.

It is the common belief of local fishermen that after a salmon has deposited its spawn, the question of its death is one of a very short time.

"The spawning ground sought by the salmon is usually sandy or gravelly bottom in a pool or eddy, but sometimes beds are swept out and spawn is deposited where the bottom is covered with small stones.

"During the winter the eggs of the salmon hatch out, and in the spring after the ice passes out of the lakes the young salmon move down the streams and can often be seen at the mouths in large numbers. It is an astonishing sight to witness the ascent of a small salmon stream by the fish, urged on by the reproductive desire.

They work their way slowly over riffles where there is not nearly enough water to float them, but they seem to have the power of keeping themselves right side up, and so long as it does not fall over, on its side, a fish six inches deep can wriggle over shoals where the water is not an inch deep, nearly as fast as a man can run."—George Bird Grunnell.

Halibut. The halibut fishery is given second place among the fishing industries of Alaska in 1918. The important fishing grounds extend from the southern end of the territory westward to Portlock and Albatross banks near Kodiak Island.



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Harriman Glacier, Prince William Sound, Alaska

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Painting by R. Swan Gifford

Mt. Cook from Yakutat Bay

Herring is the most abundant food fish in Alaska now being utilized, and it is obtainable in almost all localities. In 1918 the government aided the production of herring by introducing the Scotch cure into Alaska.

Cod. The cod industry of Alaska experiences but slight changes from year to year. The catch of 1919 was 11,000,000 pounds.

Two-thirds of the catch is made by vessels fishing in Bering Sea and on Davidson Bank south of Unimak Island. The remaining one-third comes from the shore stations located in the Sannak and Shumagin Islands. Some cod are also taken in the vicinity of Kodiak and along the southeast coast.

Whales. Despite the tremendous decadence of whaling in Alaska waters during recent years, the industry is still a highly productive one under the modernized method known as short whaling.

The picturesque whaling argosies no longer scour the seas; the old romance has departed along with the rakish, dingy craft and their motley crews, but that the whaling business is still a highly valuable industry is indicated by the recent announcement that the three shore whaling stations operated at various points on the Alaska coast during 1917 and 1918 yielded collectively products valued at \$834,127 in the latter year.

Clams. The clam beds are found in the vicinity of the Egg Islands and off the northwest point of Hinchinbrook Islands near Sitka and in other localities. They are reported to be of

considerable extent and yield razor clams of wonderful size and quality. Cordova is the principal clam canning center.

Minor Fisheries. Among the minor fisheries of Alaska may be mentioned the trout, sablefish, red rockcod, shrimps, and crabs. Others of lesser importance are the smelt, ling cod, eulachon, tomcod, flat-fish and atkafish.

Hot and Mineral Springs are numerous and occur in widely scattered regions, viz.: Nome region, Tanana Valley, and the southeastern districts.

MINING LAWS AND REGULATIONS

The Federal laws and regulations relative to the location and patenting of mineral lands in Alaska are embraced in the compiled laws of the territory of Alaska.

The United States General Land Office, Washington, D. C., issues a circular entitled "U. S. Mining Laws and Regulations Thereunder," copy of which can be secured by application from any local U. S. land office. Those located in Alaska are at Juneau, Fairbanks, and Nome.

The acts of the territorial legislature of Alaska relating to the location of mining claims are embraced in the session laws of Alaska, which can be secured from the Secretary of Alaska, Juneau, Alaska.

Pamphlets embracing both the federal and the territorial laws and regulations pertaining to the location and patenting of mineral lands are on sale at the leading stationers.

ALASKA MINERAL PRODUCTION

The mining industry of Alaska produced during the year 1920 \$22,070,000

With the return of pre-war or more normal conditions, Alaska's great mining activities will greatly expand both in the variety of minerals mined and in value of output.

	1867-1918	1919	1867-1919
Gold.....	\$311,664,993	\$ 8,000,000	\$319,664,993
Copper.....	114,526,096	12,400,000	126,926,096
Silver.....	6,303,587	900,000	7,203,587
Tin.....	917,972	20,000	937,972
Lead.....	522,318	142,000	664,318
Antimony.....	237,500		237,500
Coal.....	1,440,460	350,000	1,820,460
Platinum, palladium, marble, gypsum, petroleum, etc.....	2,548,079	228,000	2,776,079
	<u>\$438,161,005</u>	<u>\$22,070,000</u>	<u>\$460,231,005</u>

Barytes. This mineral, used in the manufacture of paints, occurs in two places in Southeastern Alaska in commercial quantities and of good quality.

Chromite. Deposits have been discovered near Port Chat-ham and Seldovia, and also in the Tolovana District.

Cinnabar. Ueta-cinnabar has been discovered in the Iditarod-Kuskokwim region.

Coal. Deposits, ranging in grade from lignite to anthracite, are of greater area than were originally contained in the State of Pennsylvania; and we know now geologically less than half of Alaska. The U. S. Geological Survey estimates the coal area at 12,667 miles. These deposits occur in all parts of the Territory, from Pacific to Arctic oceans, the least favored sec-



Summer in Skagway, Alaska

tion being the islands of the southeastern portion, where the deposits are of limited extent. The higher grade finds are in the Bering field near Controller Bay, and those in the Matanuska Valley, north of Seward. Analyses of the coals in these two fields, ranging from bituminous to anthracite, show that in quality they are equal to those of similar fields in the states.

Copper. The deposits of Central Alaska are among its most important resources. The only developed copper districts are



Midnight Sun in Summertime
Fort Yukon, Alaska

in the Chitina Valley on Prince of Wales Island and Latouche Island in Prince William Sound. Considerable development has also been done on copper deposits which lie in a belt stretching from Nabesna River to White River. Copper mining began in 1900; the total production is about 613,761,614 pounds, valued at \$126,926,096.

Placer mining is the process of separating particles of gold from the sand or gravel, with which they are mixed, by washing the gravel in moving water, the lighter material being carried away, and the heavy gold remaining, along with any other heavy minerals, such as platinum and tin, which the gravels may contain.

In its simplest form the outfit of the prospector comprises a pick, a shovel, a large flat sheet iron pan, known as a gold pan, an iron constitution and an unfailing fund of hope and patience.

In the second stage he may use a rocker, which is merely a screen on the top of a box, to separate the coarse gravel, while the finer material drops on a sloping board or apron, where by rocking the box sideways, the gravel is cleaned and passes over a lip at the lower end of the apron, which retains the heavier gold.

In larger surface operations the gravel is shoveled into a long sluice box, lined on the bottom with riffles, and set on a good grade with abundance of water, called a sluice-head; but this method requires plenty of room at the end of the sluices to take care of the waste or tailings. Where the body of gravel is not deep it may all be washed away to reach the richer material in the bottom of the valley trough, which is called the pay streak. If the ground be too deep, shafts are sunk to bedrock and the pay dirt excavated as in coal mining, hoisted to the surface and washed in the usual way. This is called drift mining. In all these hand operations only the cream of the deposit can be removed, as the cost is high, so that large bodies of low grade gravel are left untouched.

When conditions admit the use of water under pressure so that it can be used to tear down the bank and drive the gravel into the sluice boxes, this method is called hydraulic mining, and gravel of much lower value per yard can be handled profitably as the water takes the place of high-priced human labor. This method requires a sufficient slope to the ground to provide dump facilities for the waste.

In flat regions and where the pay is too deep for dredges, this difficulty is obviated by the use of hydraulic lifts. This

method, however, requires a greater supply of water with increased pressure as the material must all be lifted by water into the sluice boxes. At the plant of the Pioneer Mining Company at Nome, the material is raised to an elevation of 40 to 50 feet.

In such cases, or where the ground cannot be drained, resort is had to dredging, which can be carried on either in open water or at any point where water can be had in sufficient quantities to make a pond in which the dredge can float; the dredge being nothing more than a barge with machinery in front to scoop up the gravel, which, after washing, is dumped overboard at the stern by an endless belt on an elevator or stacker, as it is sometimes called.

It is plain that the capacity of the dredge is limited only by the depth to which it can dig, and the size and number of the boulders in the gravel on the bedrock where the best pay is found.

For these reasons, on some of the creeks around Fairbanks the depth of muck and worthless material is too great for dredging operations, while the Nome region, the Iditarod, Ruby, Circle City, Eagle and Fortymile regions, as well as the Kenai Peninsula, are well suited to their use.



U. S. Agricultural Experiment Farm at Sitka, Alaska



Hurricane Gulch Bridge, U. S. Government R. R., Alaska, 284 Miles



from Seward. Total Length, 918 Feet. 325 Feet Above Bed of Stream

Gold. Placers and lodes are to be found in all sections of Alaska where gold is probably more universally distributed than in any other country of the world.

Graphite, or plumbago, frequently called black-lead, and used for the manufacture of pencils, stove polish, and lubricants, is found on the Seward Peninsula.

Gypsum. One of the non-metallic mineral resources mined on an extensive scale at Gypsum, on the east shore of Chichagof Island, Southeastern Alaska. The crude rock is shipped to Tacoma where it is worked into various forms for sale.

Iron. Large deposits of good grade have been discovered in numerous localities. Magnetite deposits occur on Prince of Wales Island, in the Iliamna district and near Haines. Hematite occurs in the Lake Clark district. On Seward Peninsula are bodies of iron ore of considerable size.

Lead. Has been discovered and is being developed. The lode mines at Juneau carry considerable galena, and galena-bearing lodes occur in the Ketchikan and Wrangell districts. Lead ore occurs in Fish River Basin of Seward Peninsula, Broad Pass region, and the Koyukuk district. One of the most promising discoveries is in the Kantishna district.

Marble. Marble of an excellent quality is found in numerous localities in the Ketchikan and Wrangell districts, Southeastern Alaska. The most extensive development is in the vicinity of the northern end of Prince of Wales Island, with the center of activity at Tokeen, on Marble Island. Other localities include Dolomi and Dickman Bay at the southeast end of Prince of Wales Island, Revillagigedo Island, and on Ham Island and vicinity. Alaska marble is being used extensively throughout the West for interior building decorations. Cities of the West where Alaska marble can be seen in the larger recently constructed buildings include Seattle, Tacoma, Bellingham, and North Yakima, in the State of Washington; Vancouver, B. C.; Portland, Ore.; San Francisco, Oakland, Sacramento, Los Angeles, San Diego, and Presidio, California; Boise, Moscow, and Lewiston, Idaho, and Salt Lake City, Utah.

Molybdenum and Bismuth have been discovered.

Nickel and Cobalt. A copper lode carrying nickel and cobalt is under development on Chichagof Island.

Palladium. Has been discovered in connection with mining copper ore of the Saltchuck Mine on Prince of Wales Island.

Petroleum. Oil seepages have been known in Alaska for a period of fifty years, those first discovered being in the Iliamna region on Cook Inlet. All the oil lands in Alaska were

withdrawn from entry in 1910; but the Oil Land Leasing Act, passed February 25, 1920, contains provisions which promise an immediate development. Under it prospecting and production may be carried on by the payment of certain rental and royalties as follows:

"The Secretary of the Interior may grant a permit for the exclusive right for not to exceed four years, to prospect for oil or gas on not to exceed 2,560 acres of land, provided the permittee shall within two years begin drilling and drill one or more wells not less than 500 feet deep within three years, and shall within four years drill to an aggregate depth of not less than 2,000 feet, unless valuable deposits be sooner discovered."

The secretary may, if necessary, extend this permit for two years.

The discoverers of deposits of oil or gas under the permit shall be entitled to a lease of one-fourth of the land embraced in the permit—such lease to be for twenty years upon a royalty of 5 per cent of the amount or value of the production and an annual rental of \$1.00 per acre. The permittee also to have the preference to lease the remainder of the land under his permit at royalty of not less than 12½ per cent and other conditions provided.

Alaska petroleum compares favorably with the best Pennsylvania product, having a paraffin base with high gasoline content.

The Katalla field is a producing field with ten wells being operated. The product is refined and sold around Prince William Sound.



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Deserted Indian Village, Cape Fox, Alaska

To encourage production of petroleum in Alaska the secretary may waive rental or royalty for not to exceed five years and not more than five permits may be granted to any applicant.

Since the oil leasing regulations became effective, there have been filed at the United States Land Office in Juneau applications for staking oil land in Alaska in eleven different districts as follows:

District	No. Applications	Acres
Cold Bay.....	181	459,520
Katalla.....	65	99,973
Yakataga.....	36	75,520
Illiamna.....	30	69,400
Kootznahoo.....	16	35,520
Cape Spencer.....	3	7,680
Chinitna.....	3	7,680
Seward.....	2	3,520
Wasilla.....	2	5,120
Anchorage.....	10	19,840
Aniakshak.....	6	15,360
Total.....	354	799,133

Platinum has been discovered in placer operations in the Dime Creek region, Seward Peninsula, and from the Copper River region, and was reported as being extensively distributed in Sustina Basin. It is also carried in the copper ores at the Shaltchuck Mine near Ketchikan.

Silver. There are no mines worked especially for silver. This metal is obtained solely in the refining of gold and copper. The yield, 1867-1919, was valued at \$6,248,314.

Sulphur. A deposit of sulphur is being developed on Akun Island on the Alaska Peninsula.

Tin. Tin occurs in Alaska and Seward peninsulas and the Hot Springs region of the Tanana Valley, both as placer tin and in lode veins; also in Cleary Creek, near Fairbanks, near Circle City on Deadwood Creek, and on the Notak. Tin mining has taken its place as a regular industry on Buck Creek near Cape Teller in the region north of Nome.

Tungsten. In 1915 a vein was discovered in Fairbanks district, and recently near Sitka, and also in gold placers.

LOCATION OF PRINCIPAL MINING CENTERS

Aniak—Gold placer. Lower Kuskokwim, east of river.

Bering River—Coal and oil. South coast, east of mouth of Copper River.

Berners Bay—Gold lode. Southeastern, northern portion, about thirty-five miles northeast of Juneau.

Bonnifield Region—Coal. South Tanana watershed, between Delta and Nenana rivers.

Bremner—Gold placer. East side of Copper River, forty miles above its mouth.

Broad Pass—Gold lode. Head of Chulitna River, northern tributary of the Susitna River.



Hunting Coats, Knee Trousers and Spiral Leggings Are Worn by Both Men and Women When "Mushing" and Hunting in Alaska and Yukon

Candle Creek—Gold placer. Kuskokwim Valley, eight miles south of mouth of Takotna River.

Casadepaga—Gold placer. Seward Peninsula, forty miles northeast of Nome.

Chandler—Gold placer. Chandler River, northern tributary of Yukon, below mouth of Porcupine River.

Chichagof—Gold quartz. Chichagof Island, northern portion of Southeastern Alaska.

Chisana—Gold placer and quartz. Southern tributary Upper Tanana River, near east boundary.

Chisna—Gold placer. Northern portion of Chistochina River, a northern tributary of the Copper River.

Chistochina—Gold placer. Northern portion of Copper River basin.

Circle—Gold placer. About forty miles southwest of Circle, Upper Yukon.

Council—Gold placer. Seward Peninsula, about fifty miles northeast of Nome.

Dime Creek—Gold placer. Koyuk Valley, Seward Peninsula.

Eagle River—Gold quartz. Southeastern Alaska, about twenty-two miles northwest of Juneau.

Eek River—Gold placer. Eastern tributary of Kuskokwim Bay.

Ellamar—Copper. Northeastern shore of Prince William Sound.

Fairbanks—Gold placer, gold quartz and antimony. Tanana Valley embraces Cleary, Goldstream, Ester, Dome, Fairbanks, Vault and Little Eldorado creeks.

Fairhaven—Gold placer. Seward Peninsula, northern portion, embracing Good Hope, Inmachuk River, Kougarok, and Kiwalik.

Fortymile—Gold placer. Southwest of Fortymile, Upper Yukon, adjacent to eastern boundary.

Georgetown—Gold placer and cinnabar. Central portion and north side Kuskokwim Valley.

Good News District—Gold placer. Kuskokwim Bay.

Hanagita—Copper. Southeast junction of Chitina and Copper rivers.

Hammond River—Gold placer and quartz. Northern tributary, middle fork Koyukuk River, ten miles north of Coldfoot.

Healy River—Gold placer. Northern tributary of the Tanana about forty miles above mouth of Delta River.

Hope—Gold placer and quartz. Northern portion of Kenai Peninsula, southern shore of Turnagain Arm.

Hot Springs—Gold placer. North side of Tanana Valley, near mouth.

Hyder—Gold Quartz. Head of Portland Canal.

Iditarod—Gold placer. Lower portion Yukon Valley, east side.

Iliamna-Lake Clark—Copper. West shore and mouth of Cook Inlet.

Innoko—Gold placer and quartz. Lower Yukon, eastern portion, 100 miles northeast of Iditarod.

Iron Creek—Gold placer. Seward Peninsula, forty miles north of Nome.

Juneau—Gold quartz. Central portion of Southeastern Alaska.

Kantishna—Gold placer and quartz; 120 miles southwest of Fairbanks.

Katalla—Oil. East mouth of Copper River.

Kenai Lake—Gold quartz. Kenai Peninsula, twenty miles north of Seward.

Ketchikan—Copper and gold quartz. Southern portion of Southeastern Alaska.

Kern Creek—Gold placer. North shore, Turnagain Arm.

Kobuk—Gold placer, jade, copper. East shore, Kotzebue Sound.

Kodiak Island—Gold quartz. South of Cook Inlet.

Kotsina-Chitina—Copper. Chitina Valley, Copper River region.

Kougarok—Gold placer. Seward Peninsula, seventy-five miles northeast of Nome.

Koyuk—Gold placer. Koyuk River, eastern portion of Seward Peninsula.

Koyukuk—Gold placer and quartz. Upper tributaries Koyukuk River, north of Yukon.

Latouche—Copper. Southern end of Prince William Sound.

Lituya Bay—Gold placer. North portion, Southeastern Alaska, outer coast.

Matanuska—Coal. Matanuska River, tributary of Knik Arm, northern reach Cook Inlet.

McKinley Lake—Gold quartz. West side and near mouth of Copper River.

Moore Creek—Gold placer. Tributary of Takotna River, fifty miles northeast of Iditarod.

Moose Pass—Gold quartz. Kenai Peninsula, thirty miles north of Seward.

Mulchatna—Gold placer. Northern tributary Nushagak River, head of Bristol Bay.

Nabesna River District—Copper. Southern tributary Upper Tanana.

Nelchina—Gold placer. Western section Tonsina Valley, a western tributary of the Copper River.



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Painting by Fuertes

Longtailed Jaeger, Alaska

Nenana—Coal. Nenana River, southern tributary of Tanana, west portion of Bonnifield region.

Nixon Fork—Gold Quartz. Nixon Fork, Takotna River, Kuskokwim region.

Nizina—Gold placer and copper. Northern portion Chitina River, Copper River region.

Noatak-Kobuk—Gold placer and copper. Embracing Noatak and Kobuk rivers, northeast of Kotzebue Sound.

Nome—Gold placer and antimony. Seward Peninsula, southern coast.

Port Clarence—Gold placer. Seward Peninsula, sixty miles northwest of Nome.

Porcupine—Gold placer. Klehini Valley, western tributary of Chilkat, northern portion Southeastern Alaska.

Port Wells—Gold quartz. Western portion of Prince William Sound.

Prince William Sound—Copper and gold quartz. South coast, head of Gulf of Alaska.

Rampart—Gold placer. South of Rampart, Center Yukon.

Ruby—Gold placer. Central Yukon, south of river.

Shungnak—Gold placer and copper. Central part, Kobuk basin.

Sitka—Gold quartz. Northwestern portion of Southeastern Alaska.

Solomon—Gold placer and quartz. Seward Peninsula, thirty miles east of Nome.

Squirrel River—Gold placer. Western part of Kobuk Basin, Kotzebue Sound.

Sunrise—Gold placer. Northern portion of Kenai Peninsula, southern shore Turnagain Arm.

Talkeetna—Gold quartz and copper. East side center Susitna Valley.

Tenderfoot—Gold placer. Tanana Valley, sixty miles southeast of Fairbanks.

Togiak—Gold placer and quartz. Togiak Bay, indentation northern shore Bristol Bay.

Tolovana—Gold placer. Upper portion Tolovana Valley, forty miles northwest of Fairbanks.

Tuluksak—Gold placer. East side of Kuskokwim River, near mouth.

Unalaska—Gold quartz. Aleutian Islands, eastern portion.

Unga—Gold quartz. Unga Island, Shumagin Islands, south of Alaska Peninsula.

Valdez—Gold quartz and copper. North end and head of Prince William Sound.



The Wharf at Anchorage, Alaska

Valdez Creek—Gold placer. Northern tributary of Susitna River.

Wade Hampton—Gold placer. North bank Yukon, lower portion, about sixty-five miles above Andreafski (Marshall City).

White River—Copper. Headwater region of White River, near east boundary.

Willow Creek—Gold quartz. East side mouth Susitna Valley.

Woodchopper—Gold placer. South of Yukon River, between Eagle and Circle.

Wrangell—Copper, gold quartz, and marble. Central portion of Southeastern Alaska.

Yakataga—Gold placer. Southern coast, west of Mt. St. Elias.

Yentna—Gold placer. Western part Susitna Valley.

FORESTS

Practically all of the merchantable timber of Alaska is embraced within national forest reserves under the administration of the U. S. Forest Bureau. The Tongass National Forest covers the entire southeastern Alaska Archipelago, and



Labor Day at Anchorage, Alaska

the Chugach National Forest, with a width of about 60 miles, extends along the shores of the Pacific from the Malaspina Glacier to Cook Inlet.

The following statements are condensed from the official report of R. S. Kellogg, assistant forester in 1910, the report of the Governor of Alaska for the fiscal year ending June 31, 1912, and from local sources where they relate to the Fairbanks mining industries.

The total area of the forests and woodlands in the territory is estimated at about 100,000,000 acres, or 156,250 square miles, or 27 per cent of the total area. Of this about 20,000,000 acres, or 31,250 square miles, are estimated as containing timber suitable for manufacturing purposes, or more than the area of South Carolina and nearly that of Maine or Indiana. Of the remaining 80 per cent, or 125,000 square miles, one-half is classed as woodland, carrying some saw timber, but on which the forest trees are of a small size, more scattered and valuable chiefly for fuel; the tree growth on the remainder being stunted, scrubby and valueless for any purpose except the camp fires of the prospector. The region north of the Endicott mountains, all of the shores of Bering Sea, and the Alaska Peninsula south of Iliamna Lake, are practically desti-

tute of timber, producing nothing larger than willows of very small growth, and those only in a few localities.

The trees suitable for lumber on the coast region are in point of numbers and value, the western hemlock, the Sitka spruce, western red cedar and yellow or Alaska cedar. The forests are dense and as much as 25,000 feet per acre has been estimated for considerable tracts, of which 20 per cent is spruce, 75 per cent hemlock, and the remainder cedar and other timber trees. The spruce reaches a large size, up to 6 feet in diameter and a height of 150 feet. Diameters of 3 or 4 feet are attained by the cedars. The growth is fairly rapid, spruce logs averaging 32 inches in diameter averaged 262 annual rings; two others 54 inches in diameter showed 525 and 600 rings.

The forests of the interior are practically all included in the drainage basins of the Yukon and Kuskokwim Rivers and are of a more deciduous type, saw timber being secured from the white spruce and cordwood from the white birch, poplar, balsam poplar, black cottonwood, and aspen. The timber is small; white spruce and balsam poplar sometimes attain a diameter of 18 to 24 inches; while birch and aspen average about 8 inches, running up to 18 in favorable localities. Other trees are smaller. The white spruce and balsam poplar grow to 75 feet; birch, aspen, and poplar to 50; black spruce from 20 to 40, and tamarack seldom over 30. Twenty-five spruce logs 32 feet long and slightly over 11 inches in diameter showed an average of 104 annual rings, indicating a growth of one inch in nearly nine years, thus comparing favorably with the growth of red spruce in New York and New England.

The spruce of Southeastern Alaska is used extensively for box material, and is now coming into use for aeroplane frames, furniture, piano backs and oars for racing boats. The great value of this timber is in its use for paper pulp. It is little used for building purposes, due to the competition of Puget Sound timber, which is more suitable for such purposes. In the interior, the timber is used to a greater extent for building purposes, due to the high freight charges. Its principal use throughout the interior is for fuel.

The Alaska spruce, known as the Sitka spruce, has been found to be the most suitable material available for aeroplane frames, due to its toughness and pliability. With the present great demand for this material, the building up of a large and profitable industry is assured. In the spring of 1917 the saw-mills in Southeastern Alaska were filling large orders for manufacturers of aeroplanes. The production of paper pulp is attracting attention. The mill at Snettisham made the first shipment of pulp from Alaska during the year.

On the Tongas Forest, during the fiscal year (1919) there were 264 timber sales covering 45,029,680 board feet of saw timber and piling and 41,470,580 board feet cut. On the Chugach there were 112 sales covering 7,034,270 board feet and 3,932,420 board feet cut. There was also cut 4,147,470 feet under "free use." Considerable "free use" is granted annually to settlers, who are privileged to secure what they need for domestic purposes at such points as are most convenient to them.

The Department of Agriculture believes that the development of the forest and water-power resources of Alaska is a practicable means of increasing the supplies of newsprint available for the United States. Under careful management these forests can produce 2,000,000 cords of pulpwood annually for all time. The Alaska forests also contain the water power. The Forest Service estimates the potential horsepower at least a quarter of a million.

REINDEER

The reindeer industry of Alaska was established by the United States Government primarily to furnish a means of livelihood for the natives, to supply in a measure a food to replace game, seal, and walrus which were being rapidly depleted.

Number imported by the U. S. Government, 1892-1902.....	1,280
Number of reindeer, May, 1920.....	180,000
Estimated number, June, 1921.....	220,000
Number of herds, June 30, 1917.....	98



On the Copper River & Northwestern Ry. Google

Wealth Produced by Introduction of Reindeer in Alaska

Valuation of 125,000 reindeer owned by natives in 1920 at \$25. each	\$3,125,000
Total income of natives from reindeer 1893-1920	965,807
Valuation of 55,000 reindeer owned by missions, Laplanders, and other whites, and Government, 1920	1,375,000
Total income of missions and Laplanders, and other whites from reindeer, 1893-1919	400,000
Total valuation and income	\$5,865,807
Total government appropriations, 1893-1919	334,400
Gain 1654 per cent.	\$5,531,407

Ownership of Reindeer, June 30, 1919

United States Government	5,000
Missions	6,000
Laplanders	4,000
Natives (1,293)	125,000
Whites	40,000
Total	180,000

Income of natives, year ending June 30, 1919, from reindeer industry, exclusive of meat and hides, used by the natives themselves, was \$150,000 (est.).

This most important industry is under the direction of the Bureau of Education, Department of the Interior, which also has direction of the education and medical care of the natives. The immediate direction of this work is in charge of Mr. W. T. Lopp, offices, Smith Building, Seattle. Those desiring more detailed information are advised to address the Bureau of Education, Washington, D. C., or the Seattle office.

The reindeer are distributed among the natives under a system of apprenticeship, whereby each apprentice receives 6, 8, and 10 reindeer by the close of the first, second, and third years, respectively, and 10 more at the close of the fourth year, when, if he has demonstrated his ability, he assumes entire charge of his herd, and must, in turn, employ and similarly distribute reindeer among his apprentices.

Under the governmental regulations no native may dispose of female reindeer to the whites.

The Lapp herders who were responsible for the early training of the native herders were allowed a percentage of the increase of their respective herds. As shown above, the herds of these Lapps now total 23,443 head. The Lapps are not so restricted in the sale of female reindeer to the whites as are the natives, and from the herds of these Lapps an incorporated company of Nome citizens, organized to carry on this industry, have acquired about 23,000 reindeer. Their intention is to place it on a commercial basis and annually ship reindeer meat to the States.

The reindeer is essentially an inhabitant of snowy countries, feeding on lichens or moss, mushrooms, grass, and willow sprouts, which grow even on the poorest soils, and furnishes the natives with food and clothing and many little things which contribute to their comfort. Its commercial possibilities may be judged from the following extracts from official documents relating to Norway and Sweden, the northern portions of which, known as Lapland, are climatically similar to the northern portions of Alaska.

"Through Norway and Sweden smoked reindeer meat and smoked reindeer tongues are everywhere found for sale in their markets, the hams being worth 10 cents a pound and the tongues 10 cents apiece. There are wealthy merchants in Stockholm whose specialty and entire trade is in these Lapland products.

"Reindeer skins are marketed all over Europe, being worth in their raw condition from \$1.50 to \$1.75 apiece. The tanned skins (soft with a beautiful yellow color) find a ready sale at from \$2.00 to \$2.75 each. Reindeer skins are used for gloves, military riding trousers, and binding of books.

"Reindeer hair is in great demand for the filling of life-saving apparatus, and from the horns is made the best existing glue. Two great articles, smoked reindeer tongues and tanned skins, are among the principal products of the great annual fair at Nischnij-Novgorod, Russia.



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Columbia Glacier, Alaska, from Heather Island

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"In Lapland (on an area of 14,000 square miles) there are about 400,000 head of reindeer, sustaining in comfort some 26,000 people.

"There is no reason why Arctic and sub-Arctic Alaska should not sustain a population of 100,000 people with 2,000,000 head of reindeer."

Lapland sends to market about 22,000 head of reindeer a year, the surplus of her herds, which at an average weight per carcass, dressed, of about 150 pounds, is equal to 1,660 tons. As this is a surplus over and above the wants of the population, the value of this industry in the near future, as a source of meat supply from lands comparatively valueless for agricultural purposes, becomes apparent.

The present herds are nearly all located on the western coast from the Kuskokwim to Point Barrow, a distance of some 800 miles, but in the near future the industry will extend over the entire Alaska Peninsula.

Those best acquainted with surrounding conditions estimate that Alaska has grazing grounds sufficient to support 10,000,000 to 20,000,000 head of stock.

The first important shipment was made in 1911—185 carcasses, 18,750 pounds. In October, 1920, Alaska exported 98,689 pounds, valued at \$23,690.

The chief of the Biological Survey predicts, "A million reindeer grown by natives and white herders will soon convert Alaska into a vast meat-producing Territory."

Reindeer fairs are held at which discussions take place as to the best way of slaughtering and dressing, etc.

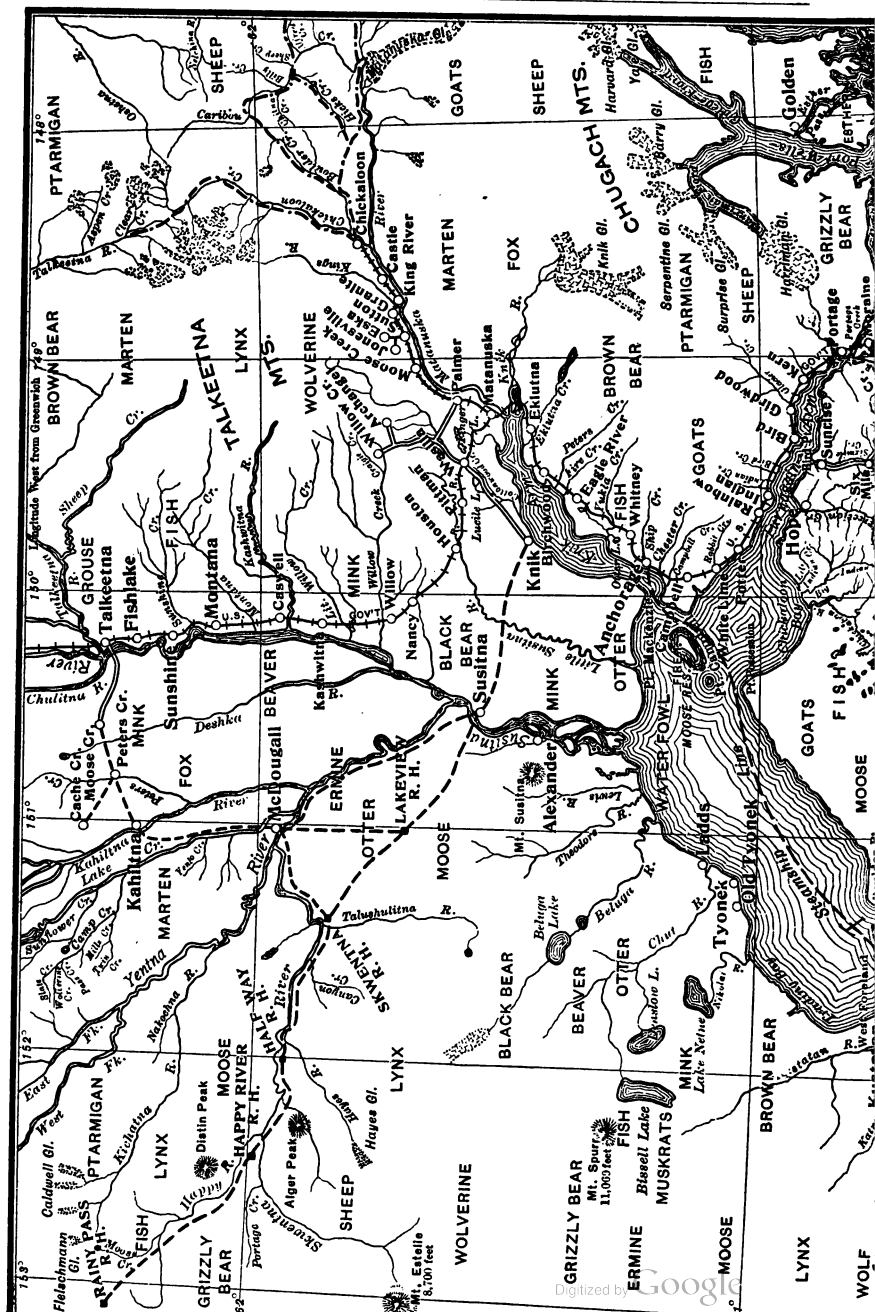
There are contests in lassoing deer, driving wild deer, pulling loads of various weights, in sled lashing, racing, and so on, and there are also exhibits of harness, sleds, and fur clothing.

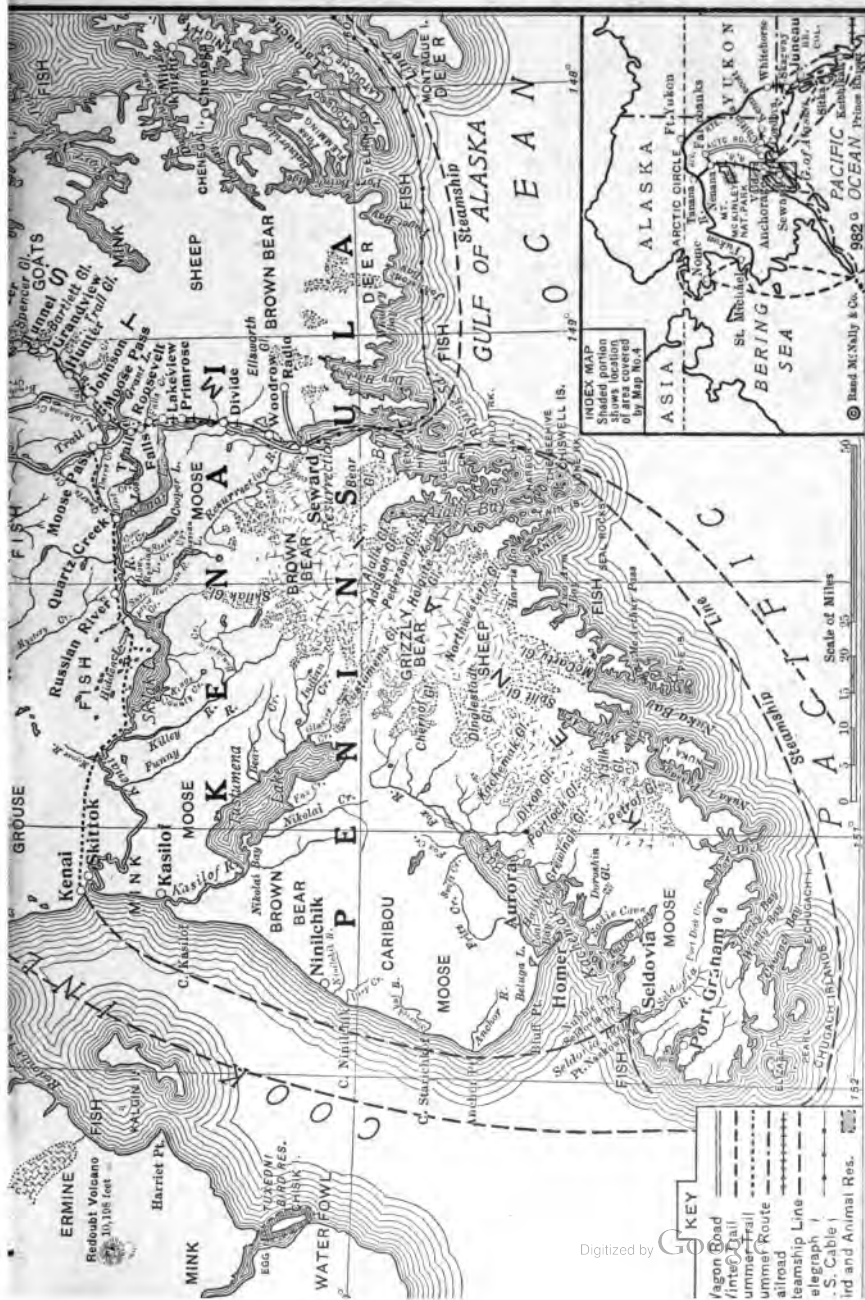
With the meat of the reindeer for food, the skin for clothing, harness and leather, the sinew for thread, the horns for knife handles, and the hair for mattresses, the reindeer meets almost all the needs of the people.

Both the Boy Scouts and the Camp Fire Girls have branches among the natives.

GAME REGULATIONS

All persons going into Alaska and Yukon with the intention of shooting wild game of any kind—from the moose to the migratory bird—are cautioned to secure copies of and acquaint themselves with the game laws of the various regions in these territories.







Top: Fairbanks. Middle: Fairbanks Public School
Bottom: Church, Immaculate Conception, Fairbanks

WILD GAME ANIMALS

Moose. This is the largest member of the deer family in the world. Moose are generally distributed throughout the timbered region except in the southeastern coast region. During August to October they inhabit the draws and valleys, the latter part of August being the mating season.

From December 1st to 25th they migrate to the willow and lake districts. The bull separates from the cows about the end of January, taking to the hills and rougher country.

The cows remain in the lake and willow country until May when the birth of the calves takes place.

Caribou inhabit the treeless and semi-treeless parts of Alaska including the bare mountain ridges of the interior and the open rolling tundras of the coast from the Arctic to the Pacific side of the Alaska Peninsula, where the so-called reindeer moss, on which they largely feed, is most abundant.

They scatter widely in summer and in the fall collect in large herds, but at all times roam widely. The great herds in the fall of the year perform a more or less regular movement in the nature of a migration, and within certain limits their course of travel and times of arrival at given points are well known.

Mountain sheep of Alaska are practically pure white, somewhat smaller, and with more slender horns than the big horn or Rocky Mountain sheep. They prefer the higher altitudes and are usually most abundant about the main divides and the higher or more central peaks.

Large numbers live on the Kenai Peninsula, the Endicott Mountains, where they range from coast to coast, and on the summits adjacent to Mount McKinley.

Mountain goat. This bold climber is confined in its range to the mountains of the Southeast Archipelago and the adjacent mainland, and the high coastal peaks, as far west as the western shores of Prince William Sound, or in other words, those regions not inhabited by the mountain sheep.

Strictly speaking, it is not a goat at all, having many peculiarities common to the antelope, and finds its nearest relation among the chamois of Europe and some little known Asiatic forms.

Deer. Only in the southeastern coast region are deer abundant, and in that district only one species, a small variety of the Blacktail, averaging not more than 100 pounds in weight. It ranges farther north than any other American deer, and from sea level to timber line.

BEARS

Alaska has no rival in respect to the number and variety of bears; no less than thirteen varieties being recognized by scientists. They belong, however, to only four general types—brown, grizzly, black, and polar.

Bears generally speaking are omnivorous feeders. In berry time they largely subsist on berries, but according to season or locality they eat salmon, shellfish, kelp, and seaweed, squirrel, mice, roots, etc. The grizzlies however are very destructive and live on caribou and moose.

Brown. These are the most numerous and are more nearly related to those of the old world than to the other American



Angular Gold-Bearing Gravels on Grass Gulch

species. Huge in size and larger than any others except the polar bear, they command a reputation for ferocity equal to that of the grizzlies.

The brown is found on Kodiak Island, Alaska Peninsula, in the Yakutat region, and on Baranof and Admiralty Islands. They appear to have attained their maximum size on the mainland and Kodiak Island and are more commonly known as the Kodiak.

Glacier. The glacier bear belongs to the family of grizzlies, is known as "Blue," is not shy, and is found all through the Alaska Range.

Grizzly. The grizzly bears are generally distributed through the Kenai Peninsula and adjacent regions, but most abundant in the Endicott Range on the north, and the Nusotin and Mount McKinley ranges in Central Alaska. They spend the summers chiefly above and near the timber line and roam largely.

Black. These are fairly common all through Alaska. They are shy.

Polar. These huge fellows are the largest of all and not found south of the Arctic Circle.

Walrus. The walrus is now found occasionally south of the Arctic Circle. Those which formerly herded on Bristol Bay have been practically exterminated.

Fur Farming. Fur farming in Alaska gives promise of becoming an important industry. Efforts along this line have usually been limited to fox propagation, but reports have been received of attempts to raise marten, mink and other animals. Records are very incomplete in regard to fur-farming operations in Alaska.

The Department of Commerce has leased the following named islands off the coast of Alaska for fur-farming operations: Chirikof, Little Koniugi, Middleton, Pearl and Simeonof.

GAME IN MOUNT MCKINLEY REGION

To the sportsman who is seeking large game the slopes of the Alaska Range furnish an attractive field. Nowhere else in Alaska are the four largest game animals—the bear, the sheep, the moose, and the caribou—found in such numbers and in such close proximity as in this region. The very reason of this abundance lies in the inaccessibility of the field, which must deter most sportsmen.

It cannot be reached without the organization of an expedition prepared for a campaign of at least two or three months which makes it beyond the purse and time of the average hunter.

There are two possible routes of approach to the Alaska Range. One is from Seward and one from Anchorage; both by U. S. Government R. R.

The convenient route to the Alaska Range is via the U. S. Government R. R. from Seward or Anchorage. Parties can leave the train at any one of a number of stations and approach the range at different angles.

Brown bear can probably be found in a few days' trip from the coast, and as the journey is continued toward one of the

passes at the head of the Skwentna drainage, moose will be met. Sheep will be found in the high range, beyond which lies the caribou country, which, under the most favorable conditions, requires at least a month's journey from Beluga.

The second route of approach is from some point on the Tanana River, which can be reached by steamer either from the mouth of the Yukon by the middle of July, or by way of the White Pass Railway and steamer down the Yukon by about June 20 to July 1.

Landing can best be made at Nenana. The mountains can be reached in a few hours' travel south on the U. S. Government R. R.

Another route would be up the Kantishna River to Roosevelt, thence by U. S. Government R. R. to the foothills. This would require the chartering of a special boat, and hence would be far more expensive. If the route up the Tanana be chosen, pack horses might be procured at Fairbanks, but this is by no means certain.

A hunting trip could be made into the Susitna region by taking a steamer up Susitna River to the limit of navigation, and then proceeding with small boats up the watercourses or, better still, overland with horses.

The expense and duration of the trip are likely to be comparable with those into the Alaska Range described above. Matanuska Valley is now traversed by U. S. Government R. R., placing the hunter immediately in region of game animals and fish. A few weeks' trip in this valley would probably suffice for some good sheep and bear hunting as well as excellent trout fishing.

The northern part of Kenai Peninsula is, to the non-resident hunters, one of the most accessible of the big-game regions of Alaska. Here a licensed guide is required, who can be hired at Seward. Hunting camps for sheep, moose, and bear can be pitched within striking distance of the U. S. Government R. R. and thus communication can be kept up with mail and telegraph.

Anchorage furnishes a good and convenient outfitting point for the big-game hunter going north of Kenai Peninsula, such as the Matanuska country or Alaska Range and for those who are going via U. S. Government R. R. to McKinley National Park.

In the mountains there are sheep, caribou, glacier bear, and others of the grizzlies, which attain an enormous size; also ptarmigan of the grouse family. On the plateau and near foothills there are larger bands of caribou, glacier, grizzly and

black bears, ptarmigan, and occasionally a covey of prairie chickens, known as pintail grouse. Proceeding from the mountains and plateau-land, sparsely timbered country, covered here and there with black spruce, is reached and in this region are moose, black bear, occasionally a grizzly, pintail and blue grouse of the small variety, and known, in that country, as the fool-hen. In the river bottoms are partridges, locally called willow grouse because of feeding on the willow buds.

Generally distributed over this whole region are beaver, otter, mink, and muskrat; black, silver, cross and red foxes; lynx, wolverine, marten and ermine.

Fishing. All clear water streams contain grayling and trout of different varieties in large numbers. In Wonder Lake in the Kantishna country trout have been caught weighing twenty-five pounds.

In Lake Minchumina, shovelnose pike are very numerous, the writer having seen 56 caught with one trolling hook in four hours' time, their weight ranging from 10 to 30 pounds each. White fish of the very finest are taken here with nets.

This particular lake is the home of the moose and one of the greatest water fowl regions of the North. In this locality



Tundra in Spring Bloom Near Nome

the migrating birds nest in the thousands of lakes and have their young undisturbed by man. Beginning about the 20th of April, the migrating birds arrive in such numbers that the noise made by their calling is almost deafening.

Ducks of all varieties, geese, crane, swan, snipe, and shore birds are to be had here. In August the young ducks come out into the lake.

Large sections are covered thickly by them and they hardly rise when a boat passes through the mass. The lake looks as though it were covered with a blanket of water fowl. The same conditions exist in Lake Minto region.

In the country surrounding Lake Minchumina the beaver is at home. In the mountains and the near foothills the traveler will find good footing, and can always select routes that will carry him along the low divides, where, he will find broken shale and hard footing, and the moss if any will be white, caribou moss, which does not bother a person as do the heavier mosses found in the low, flat country.

Climbing can be made with gradual grades without tiring. In the winter in the mountains snow shoes are seldom used. The winds that blow at times drive the snow off the ridges and sides into the canyons and other depressions, where with the cold it becomes hard enough to walk on. It is thus that snow slides are formed.

A peculiar thing is that on a cold day on leaving camp and climbing up on the mountains, the higher the altitude, the warmer it really is. The writer has in mind a time when reaching the ridges, on a sheep hunt, the "parkay" and sweater had to be taken off and packed, to avoid perspiring and, on coming down, put on again.

On the plateau which extends along the foot of the Alaska Range are "niggerheads" lying on a solid foundation of gravel. They are grass clumps which attain as high as three feet, never seeming to rot but increasing in size each year. They grow very close to each other and are a temptation to the stranger to step from one to another; but he soon experiences their shaky uncertainty and picks his way between them. This with the heavy moss (which is wet and of a deep growth) causes great fatigue. Therefore avoid the lower levels away from the mountains, at least during the summer. Select the sections known to have the minimum of niggerheads.

Kantishna City, located in the heart of the Kantishna mining district, where the traveler can see the gold being taken from the ground in various ways, is but a few miles away, and he who avails himself of the accommodations to be had at the road-house there can make trips of two and three days' duration,

by the use of a pack animal or two, and visit all of the country around, the traveling being very good from this point.

To arrive at Kantishna in the summer a person should make arrangements with some of the numerous gas boats going to Roosevelt on the Kantishna River from Nenana.

From there it is only 30 miles over a road that the Government has constructed to Kantishna City. In this section a person will find everything that can be had in the interior in the line of game, fishing, and scenery.

People wishing to go to Lake Minchumina in the summer can charter gas boats and, taking a canoe with them, are able to leave Nenana and go into the lake in about four days at the most.

McKINLEY NATIONAL PARK

This, the greatest of U. S. Government reserves, crowns the higher reaches of the Alaska range, one of the most prominent chains of this country. Its boundaries extend from the base of Mount Russell in a northeasterly direction approximately 110 miles; thence due north 20 miles, west 40 miles, south 20 miles, southwest 65 miles, and southeast 30 miles to point of beginning. The area is about 2,645 square miles, or 1,692,-800 acres.

The north and west fronts of this range slope down abruptly to the Piedmont plateau which stands at 2,500 feet above sea level. The south and east fronts descend to the Susitna lowlands and the Copper River plateau, these rising about 3,000 feet above sea level. This mass of rugged mountains is both higher and broader than the Sierra Nevada and of greater relief and extent than the Alps of Europe.

There is a well defined crest line which varies from 6,000 to 8,000 feet in height and is traceable with but few breaks for several hundred miles. Numerous peaks tower above this sky-line, the most prominent being Mount McKinley, 20,300 feet; Mount Foraker, 17,000 feet, Mount Hunter, 14,900 feet, and Mount Russell, 11,350 feet; the first two named being within the park; Mount Hunter and Mount Russell just outside the southern limits. Mount McKinley is distinguished not only for being the highest mountain on the North American continent, but also in that it has the most abrupt rise on its northern face of any mountain in the world. From its base on the Piedmont plateau this rise is about 16,000 feet. At its base are the glaciers which feed the Kantishna River.

Both slopes of Mount McKinley and Mount Foraker are ice covered. There is a striking contrast, however, in the extent

of the glaciers between those on the coastal slope with its abundant precipitation and the inland slope where drier conditions prevail. On the former some of the glaciers discharge at tide-water and the fronts of many are only 200 to 800 feet above sea level. No glacier of the inland slope reaches a lower altitude than 2,500 feet.

Climatically considered, the Mount McKinley region is divided into two general provinces separated by the Alaska range. On the inland side the climate is characterized by short, comparatively warm summers and long, cold winters, with a low precipitation. The area draining into the Pacific Ocean enjoys more equable conditions, the summers being longer and cooler, and the winters warmer than in the interior, while the precipitation is very much greater. The lower levels of this region are the important breeding grounds, and some of the permanent ranges of the non-migratory herds of woodland caribou, the white sheep, and the giant moose.

The snowfall in the Mount McKinley country ranges from two to four feet with very fine flakes on the north side, to very heavy fall on south slope, and as soon as the snow falls in the early winter the trails are traveled, and there is enough travel on the principal ones north of the range to keep them well opened. It is only after an extra heavy snowstorm that snow shoes are necessary on the trail, but it is not such hard "mushing" as the old beaten trail is underneath. South of the range snow shoes are needed till June.

About the month of February, and from then on, the trails are the best until the latter part of April, having been built up by travel until they stand higher than the surrounding snow.

It is at this time that the traveler will most enjoy his dog-team transportation; the days are lengthening, the sun hovering to the extent that, even though a cold night is had, the days will warm up and there is usually clear, bright weather.

WILD GAME BIRDS

Alaska is the great breeding ground of the water birds which annually migrate southerly in winter. These include ducks, geese, swans, snipe, curlew sandpipers, and a host of others which all resort in thousands to the open tundras and valleys of the far north during the breeding season. Three varieties of ptarmigan inhabit the higher mountain tops of the coast and interior, and the tundras of Bering Sea and Arctic Coast, including all the Aleutian Islands. Five species of grouse

are timber birds. Countless numbers of gulls and other sea-birds breed on the tundras of Bering Sea and rocky coast islands. The Government has set aside seven bird reserves in Alaska, the largest, between the mouths of the Yukon and Kuskokwim Rivers. The others are small isolated islands—St. Matthew, Hall and Pinnacle, Walrus, Otter, and Bogoslof in Bering Sea; Fire, Chisik, and Egg in Cook Inlet; St. Lazaria in Sitka Sound.

WILD FLOWERS

"Alaska is a land of flowers and ferns and mosses. It is probable that more than 2,000 species of flowering plants and shrubs find a home within its borders, to say nothing of the hundreds of less conspicuous ferns and grasses, of which latter there are said to be more than 40 varieties.

"Many of these are species common to circumpolar regions, and some of them were distributed by the Russian botanists a hundred years ago, so that not a few are the common garden flowers of the States. Red and yellow columbines, blue lipines, aconite or monkshood and larkspur give color to the forest borders; yellow and white water lilies keep company with purple flags in the marshy grounds; the tundras are gay with dandelions, buttercups and daisies, and the hillsides are covered with acres of blue forget-me-nots, white heather and pink roses by the hundreds of thousands.

"The fireweed flaunts its magenta blossoms everywhere, while the huge leaves of the skunk cabbage and devils club guard the borders of every runlet in company with the riotous salmon berries. These for the valleys. As you climb the mountains, gentians, saxifrage and lady slippers, cyclamens and asters, and hundreds of others in all colors and names known only to the botanists, help to paint the picture. The white daisies of the Tanana rival the Shasta daisies of Burbank in size and purity of color; violets, both blue and yellow, are among the early blossoms, along with the anemones, and the little dwarf dogwood or bunch berry in company with the delicate wood fern carpets the open wood with vivid green and silver stars, as it does the forests of Washington.

"This is no land of perpetual ice and snow. Glaciers there are, as in Switzerland, but the flowers blossom at their very feet, and it is an easy matter to gather a hundred varieties of flowers without walking more than a mile from home, unless it be in the farthest north, and even there Flora's footsteps have left some of her treasures, be they nothing more than the silken white seed pods of the rushes, flecking the tundra like snow drops.

"To the eastern tourist, with his or her preconceived ideas, it is a constant source of surprise to see pansies, marigolds, poppies and nasturtiums flourishing on what was supposed to be a frozen wilderness, while the rapidity with which they grow and become acclimated is astonishing.

"The California poppy, with its blazing orange, native though it be of warmer climes, seeds itself as far north as Fairbanks and Dawson, and the weeds of the states have not been slow to follow its example."—From "Alaska," published by Alaska Bureau, Seattle Chamber of Commerce.

THE ALASKA DOG TEAM

The dog team will always be a part, in fact, the greatest factor in transportation in the northern country. In winter as soon as a person leaves the railroad, or the automobile roads, he is in need of the dog team as much as before the coming of railroads, automobiles, or the horse. Many times when the country is struck with storms all other means for transportation are tied up.

Traveling in the interior after October 15th is by dog team, which can be hired for about \$25 per day, this amount covering charge for driver and his board, and food for the dogs en route. The equipment includes dogs, harness, sled, kettles, and pans for feeding; snow shoes for driver, robe for sled, tarpaulin and charcoal foot-warmer, in fact, all the traveler needs for his comfort except his personal clothing. Such a team should, when trails are well broken, make from 25 to 35 miles a day and haul 600 or 700 pounds.

A team may consist of from 5 to 25 dogs, 7 being a sufficient number for the average purpose. When undertaking a journey the traveler should see for himself that the following emergency articles are in the sled bag:

Dog moccasins for use should sore feet develop; a bottle of turpentine; a can of vaseline, a large bottle of castor oil, and some powdered areca nut; also a can containing woolen cloths well soaked in kerosene, these for use should the traveler get wet feet.

In such an event, get to timber quick and build a fire, using the rags for starting the fire. Put in the sled-bag a piece of gunnysack to dry off the dogs' feet instantly when they get wet. This is to prevent freezing, the possible loss of nails and the skin from ball of foot; maiming them for the season at least, and causing tender feet permanently.

Rivers running in the direction of the trail are used as part of the route, and it is by driving into an unexpected "overflow" that there is danger to both men and dogs from getting wet.



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Fur-Seals, St. Paul Island, Bering Sea

An "overflow" is water flowing on top of ice, and easily seen in time to be avoided, except when absorbed by falling snow and then presenting the appearance of snow only.

A warning to those who may travel in the North: A white man's team will not bother or bite a person, neither will an Indian's team bother Indians; but a white person should always keep clear of the natives' dogs and vice versa, especially where the teams are not used to towns, and where the Indian teams do not see much of the white man. This holds good when approaching an Indian camp where dogs are liable to be loose. If attacked, never show fear; put on a bold front. Do not turn your back and run, for such dogs are cowards like their wild ancestor, the wolf.

A driver must learn the traits of his dogs, each one of which has his peculiarities. Some will shirk until properly looked after by the driver; others are high strung and easily excited, and at times will try to pull the whole load. Try to match teams of dogs as to weight, gait, and speed.

As little punishment as possible should be administered while driving a team. Cheer them along and if any of them cannot or will not keep up and work without beating and nagging, thereby demoralizing the whole team, get rid of them.

Purchasing dog teams. Good work dogs can be bought in the interior at from \$20 to \$40. The same care in buying should be observed as in purchasing horses in the States and some one who knows the dog as a work animal is indispensable to the transaction. All dogs should be tried out before purchase; as it is not always the fine looking dog that is the worker.

The lead dog is half the team, and securing a good leader is a most important proposition. The leader guides the team at the driver's command of "gee," "haw," "whoa," or "mush." One that has had proper training will respond to these commands as fast as spoken (regardless of any excitement on the part of the others of the team "who know nothing but to pull and work") and will always obey. A properly trained leader will not pull on the load but be in readiness to use his strength to guide the team.

Dogs from two to six years old, weighing 80 to 100 pounds, are best for general work. They will not break through a new snowshoe trail which heavy dogs will do. When fifteen light-weight dogs are hitched to a sleigh (sleighs range from the racer of 8 feet to those of 16 or more feet) they are faster and better for speed with a light load.

Buy only dogs whose tails have not been cut. The large, bushy tail is necessary to the dog while resting, to keep warm the parts that are not covered by the woolly growth beneath the hair. If dogs are properly cared for, they carry their tails high over their backs and do not interfere with the dogs hitched behind them.

Where better accommodations can not be had, the native dog will curl up on a bit of brush and with his nose buried in his bushy tail put in a good night's rest.

In winter, care must be taken that the dogs' nails do not protrude too long and they should be looked after regularly.

Some dogs have large quantities of hair between the toes, causing the feet to ball up in soft weather and often causing freezing of the feet. The driver should remove this surplus hair by singeing.

Care of dogs. The native dog knows what work is, and when well treated likes it. He is given one meal a day, consisting of either dried salmon, or rice or corn meal cooked with tallow or bacon and dried salmon, cooked feed being considered the best in the long run.

When fed dried salmon they should be watered within an hour after feeding, and should always be well watered in the morning before a start is made, first taking the chill out of the water. When having used dried feed, do not shift to cooked rations. A team that is not watered before starting will be stopping all along the route snatching snow; will refuse to drink water at the proper time, and with the snow habit the entire team will not all be pulling at any one time.

Good dogs kept tied up and properly cared for become almost unmanageable when they see the sled and harness being put in readiness for a trip. It is then necessary to have a stout



Looking down Gastineau Channel from Mt. Juneau

rope (long enough to connect with the main tow-line) tied to some object that will hold the team until all are in harness and everything is ready to go. This rope must be so fastened that it can easily be released. There is need for a very strong brake for the ride will be fast until the team settles down to steady work for the day.

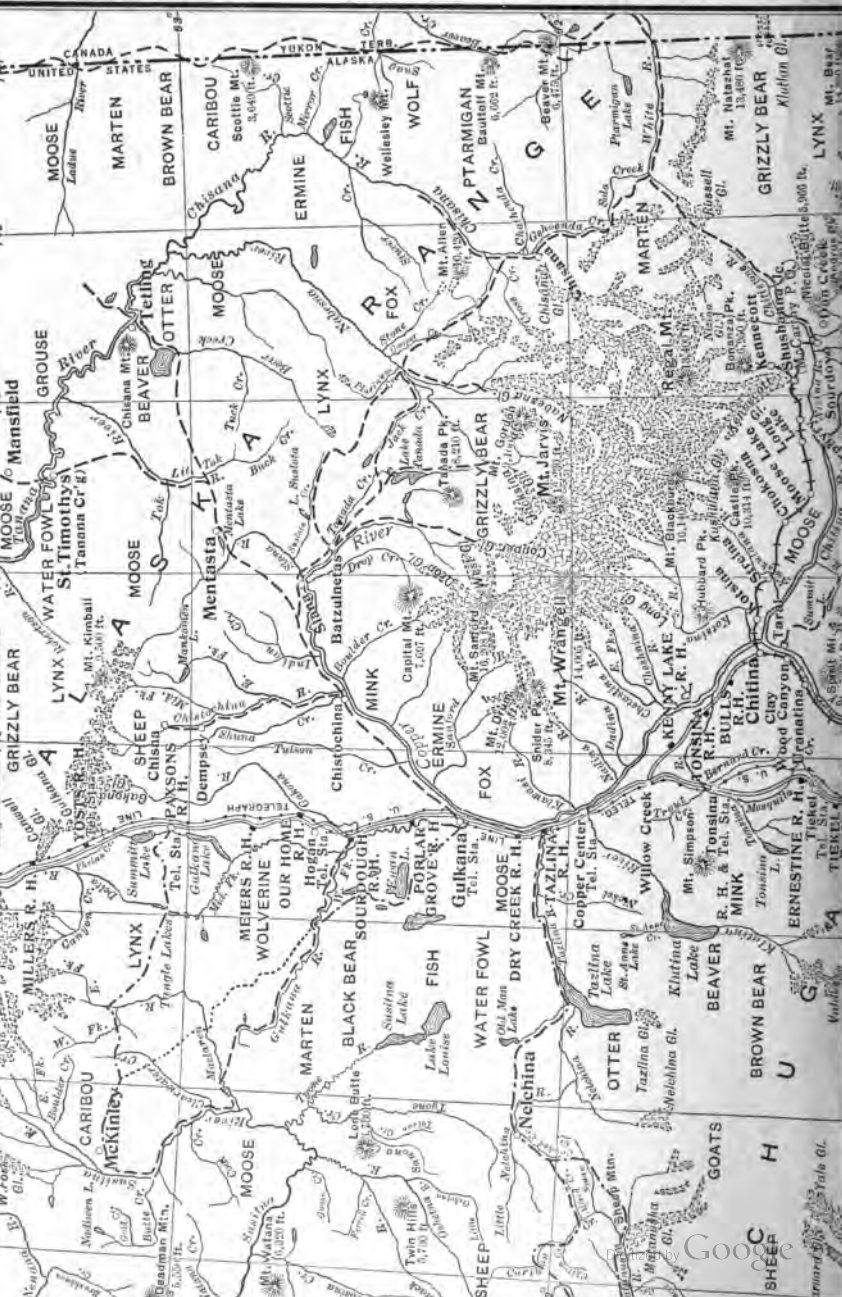
In summer when the snow is gone dogs are placed in fish camps where salmon is being caught and dried for dog feed for the coming winter for which the charge is from \$4 to \$5 per month for each dog, the feed being the offal from the salmon. This is cooked and keeps them in good condition.

Dogs should be kept where there is shelter from the rains and the hot sun. They have a heavy wool under their hair, and this becoming wet either from rain or sweat causes them to steam and become sick. Combing the dogs in June, July, and August, at which period the dogs generally shed their old wool, is the proper thing to do.

Dogs should always be left so they can reach water during the summer. A high bank of a river where the wind can strike them is the best place for dogs. Here they have some rest from the mosquitoes who punish them severely.

Dogs are often used as pack animals in summer by prospectors and by those living in the hills. The average pack dog will pack from 20 to 40 pounds.

A prospector who has his dogs with him and has to care for them himself can make use of them to good advantage. Five





dogs will pack enough at one time to keep a prospector going for a month along with the wild meat that he kills.

Another service the dog will render in the summer is to assist his master to "line" his boat up rivers which have long gravel bars. In this they are of great assistance and will line a boat all day. Their strength is not to be overlooked. On a sled in winter he pulls more than a man can.

SUGGESTIONS FOR SPORTSMEN

Outfitting. The hunter going to Alaska will simplify his preparations and reduce his traveling expenses and perplexities to the minimum by waiting to purchase his outfit until he shall have arrived at the particular section in which he intends to hunt. Of course, he will take along his favorite rods and the right guns and ammunition for the various game, big and little, and have them with him, and he should take light wading boots, and in summer have rubber packs for side-trips,—these latter to be purchased in Alaska.

It must be kept in mind that Alaska has five different climatic divisions, varying from the frigid zone on the north to the temperate region on the south; from a cold dry climate in the interior, to a very wet and moderate climate on the south coast, where the thermometer rarely registers zero. In these several divisions the conditions vary, and the selection of wearing apparel, putting up an outfit, and the transportation must have special consideration for each particular region.

Complete outfits are to be had at the following named places:

Anchorage, Atlin, Northern British Columbia, Bethel, Chitina, Circle, Cordova, Dawson (Yukon), Eagle, Fairbanks, Fort Yukon, Iditarod, Juneau, Ketchikan, McGrath, Nenana, Nome, St. Michael, Selkirk, Seward, Skagway, Tanana, Valdez, Whitehorse (Yukon), and Wrangell.

The advantages derived from buying the equipment as suggested above are several. The outfitters at these places know, from long experience, the requirements, and have in stock the things most suitable in clothing, food, and other equipment. They know how much and how little of each item; they know how to put up an outfit in proper sequence for use en route and convenience in transportation; they will pack and label the principal things for each day's use and consumption in small quantities and so selected that the container may be dispensed with; and they will put, in a separate and distinctly labeled package, the things that are not to be used during the trips from camp to camp. Taking into consideration the avoidance of over burdening with useless stuff, and the relief from anxiety and delay when buying in the States and shipping



Transportation Facilities

The River Boat, the Railroad and the Dog Team

into Alaska, the prices charged are very reasonable. One of the greatest benefits accruing from buying from the local merchant is in securing his interest and good will. He becomes a friend and adviser; he wishes his patrons to be satisfied and successful; he desires them to come into the Territory again, and bring their friends. Taking your outfit with you into his town and ignoring him, well, he's just an every day merchant.

Hunters in Alaska must use guns specially adapted to the game sought. For the little coast deer on the islands and along the coast of Southeastern Alaska small caliber such as 25-35, 32-40, 25-20, 30-30, are plenty large enough and do not destroy the meat. Hunting large game, caribou, moose, etc., use a gun much heavier, of high velocity, and great striking power, such as 7 MM.-8 MM.-30-40, or one using the 1906 government ammunition. The last named is the favorite among the "sour-doughs," using the needle-point soft-nose and lever action of the carbine size. Those intending to hunt north of 62° or in any place where the temperature will be 25° below or lower, the gun should be taken apart (screw spring and all), every particle of gun grease removed, and every piece wiped thoroughly dry. Then moisten the fingers with three-in-one or nitrosolvent oil, pass the pieces through the fingers, making sure that the oil is applied to every part lightly so that it rests in the pores of the steel.

Never take a gun into the tent or cabin, except to leave it there long enough to become warm, when all of the sweat should be wiped off. Guns left in the cold — never taken in — will remain in good working order. When they are finally put away, clean thoroughly and then incase heavily with gun grease.

In Southeastern Alaska, on account of the intense moisture and salt water, guns must at all times be in heavy gun grease. In this region they should be kept indoors, well wiped, and greased, and the grease removed from the inside of the barrel before using.

Never have a load in the barrel of a packed gun. There is no reason or excuse for so doing. It may be caught in overhead brush, or when used to rest on as a staff; both of which a gun on these trips is used for. Have the butt of the gun always concave, so that the points will dig and hold in case of slipping. With very little practice a shell can be thrown into the barrel while the gun is coming to the shoulder — loaded and cocked in one action. Always have the magazine loaded.

Care of ammunition. Ammunition left out in very cold weather should stand at least twenty-four hours near a stove to dry out before using. Steel taken from cold outdoors into a warm atmosphere will sweat. Smokeless powder when damp

loses largely its explosive power, and bullets, propelled by such, fall almost anywhere after leaving the muzzle of the gun. Such a condition occurs when shells are left in the cold.

Clothing. Persons going into Alaska in summer (June until September) should wear the same clothes they wear in the States, taking along such wraps as when making a trip to Europe or along the coast of the United States. In winter when traveling along the southern coast take along the same apparel as worn in the northern states. Overcoats are worn by those in transit on the coast and by the people in the towns and cities, but never by the overland traveler who walks. Be sure of protection against wet weather on the coast.



Sun at Mid-day December Twenty-Second

When traveling on extended trips across country have three two-piece suits of medium-weight underwear, and three heavy woolen shirts, or those similar to soldiers' heaviest shirts; two suits of knee trousers, spiral leggings, and hunting coats made of forestry cloth. These are best for summer and winter, and are worn by both men and women. The trousers made of brown duck cravenetted can be had at every place in Alaska.

Socks in winter should be of heavy wool and reach to the calf of the leg and there should be a very liberal supply. Mushing is hard on socks. Sometimes two pairs are worn at the same time; laundering is irregular.

Leather shoes are not worn in the winter in the interior—that is, away from the south coast—except in the towns where people are mostly indoors. The oil in leather absorbs the cold. Moccasins are the foot-wear where the country is cold enough to prevent wet snow, or where the snow will not melt on them

from the heat of the body. Moccasins, lacking the oil, are porous and wearers must avoid "overflows." In cold weather one who is wearing moccasins and steps into water must get a fire at once and change. Therefore in traveling with dog-team it is imperative to have a good supply of woolen socks and an extra pair of moccasins, with insoles one-half inch thick. The insoles serve not only as cushions but also protect the feet from the cold ground. Have this foot-wear always on the load for ready use.

For the hands use the native mittens to be had in the interior of Alaska, and have at least two pairs. They are made of moose-hide, trimmed at the top with fur reaching to the elbow, and lined with blanket. The proper thing is to have the mittens connected with cord long enough to go around the neck and allow the wearer to drop them at pleasure.

Wear woolen mittens inside of the native mittens. Always keep wrists warm; be sure and carry on your person an extra pair of these woolen mittens to use immediately in case of perspiration.

Never allow yourself to perspire,—always be on guard against it. In extreme cold weather it is taking a great chance of freezing to death. In a few words, properly dressing in the "North" means putting on just as little as one can get along with, always having plenty to put on to prevent suffering. Persons traveling must regulate their gait so as to warm up if feeling chilly, without adding more clothes. A good woolen sweater is a part of the outfit and should never be omitted.

The head-gear consists of ordinary woolen cap with flaps lined with fur that can be held up or let down over the ears and neck.

Muckluks are water-boots made by the Eskimos of seal-skin top and walrus hide bottoms. A pair of these properly oiled should be in the outfit for wear in overflows.

Leather shoes cannot be used with snowshoes; nothing but moccasins or muckluks will answer. Snowshoes should be purchased wherever it is intended to travel through and snowshoes are necessary. Snowshoes made for wet snow will not answer in dry snow. The managing of snowshoes is very simple. There should be a pair of what are known as trailers for use on light broken trails.

Glacier ice is smooth and hummocky. When traveling where it is forming, ice creepers are in order.

When traveling via dog-sled in winter, the "bed" consists of a robe, at least one double blanket and a tarpaulin, the last named to roll the bed in, as protection from the ground or snow,

and as a wind shield. This should be 15 by 8 feet of 8- or 10-ounce canvas. Making the bed: One half of the tarpaulin goes under and the other half covers the top. On hunting trips, traveling with tents, these beds are equally as desirable as if without shelter.

As if to make up for not having poisonous reptiles in Alaska, mosquitoes are plus in the summer time, but are not known to convey disease germs of any kind; malaria is unknown in Alaska. Therefore there is the mosquito tent, in which two men can lodge and close up with absolute protection against rain and mosquitoes. It has holes for windows covered with bobbinet, a canvas floor, and a drawstring door. It can be



Top: Mountain Goats
Bottom: Salmon Ascending Creek Near Ketchikan, Alaska

tied up between two trees in a moment's time. The bed is left inside this tent and they are rolled up together. This tent weighs about ten pounds. Two head nets are necessary when traveling in the interior, the second in reserve. The proper kind have bibs, front and back, that tie with strings under the arms. Be sure and have plenty of canvas gloves with long gauntlets for protection against mosquitoes.

Roadhouses. These are the stopping places for travelers along the winter and summer trails, built at a day's walk apart—as are the old Franciscan Missions from Sonoma to San Diego in California. On some of the more important trails they are located at shorter distances. The furniture of these places is home made, unique and comfortable, restful and inviting to the travelers of the trail. Many of the roadhouses have bath tubs. The name has no such meaning as the suburban houses in the States; they are the "hotels" of the region.

The buildings are of logs and chinked with moss; the roofs covered with moss and dirt, and are warm in all weather:

Upon arriving travelers are cordially received, assisted in removing wraps, and hanging footgear and mittens on the drying rack; furnished with slippers and beds assigned for rest until meal time. The latest newspapers, magazines, victrolas and assorted records are part of the house equipment. The spirit of the frontier pervades; the roadhouse manager's greetings are as for friends rather than temporary guests. Most all houses have gardens attached in which vegetables are raised. There are always rooms set aside for women, and there is not to be found elsewhere greater deference and courtesy to women than at these Alaskan roadhouses.

The food includes wild meats—caribou, sheep, moose, whitefish, trout, grayling, and pike—depending on the locality—and, as the North is a great bird country—grouse, partridge, prairie hen, spruce hen, ptarmigan, etc. Vegetables are served even in the most remote places.

Charges range from \$1.00 to \$2.00 per meal and from 50 cents to \$1.00 for bed. The service, generally, with travelers is breakfast and dinner upon arrival at the end of day's journey.

On the main trails, such as the Chitina-Fairbanks and the trails from Fairbanks to Nome, relief U. S. telegraph stations are located at intervals. Roadhouses at or near these stations receive daily bulletins of all the big events in the world.

Travelers by trails will find the woods well cut and blazed and where they cross open country, tripods or other markers show the way. Some roadhouses have beacon lights on tall poles that can be seen for several miles.



Top: Ketchikan, Alaska
Bottom: Portion of Ketchikan Trolling Fleet

PUBLIC SCHOOLS

Public schools are maintained for white children and children of mixed blood leading a civilized life, and are administered under both Federal and territorial laws.

There are 163 teachers; 88 per cent of the high school teachers are college graduates. Schools in Anchorage, Douglas, Fairbanks, Juneau, Nome, and Valdez offer a 4-year course of high school work. Schools in Cordova, Seward, Skagway, and Wrangell give a 3-year course. Petersburg and Sitka have a 2-year course. Alaska high schools are in general accredited at the leading state universities. Juneau and Ketchikan have

teacher-training departments in connection with high schools. Five of the larger communities offer courses in manual training and domestic science, and at least some work along this line is done in approximately one-fourth of the schools.

Special supervisors of music and drawing are employed in a few of the larger institutions; orchestra and chorus work are not neglected. Military drill is a regular part of the required course of several of the schools. Medical inspection and dental examinations have been introduced—eight schools providing for the former and two for the latter.

The following schools are equipped with motion-picture machines which handle standard size films: Anchorage, Cordova, Douglas, Juneau, Ketchikan, and Valdez. The Junior Red Cross is well represented in the territory and in several communities troops of Boy Scouts are being organized. School savings from 37 schools show a total savings in government securities and savings banks of \$59,817.25. In the incorporated towns and incorporated districts there are 16 white schools, with 98 teachers and an average attendance of 1,635. Outside the incorporated towns and incorporated school districts there are 52 schools with 65 teachers and an enrollment of 1,357.

Eleven communities hold citizenship high schools with an attendance of nearly 400 embracing 35 different nationalities.

PUGET SOUND TO POINT BARROW ALONG ALASKA'S COAST

Leaving Puget Sound, the ship, after touching at Victoria, British Columbia, proceeds through the Gulf of Georgia, and traverses for 800 miles before reaching Alaskan waters a stretch of inland waterways separated from the Pacific Ocean by numerous islands, and which are broken only by the wide waters of Queen Charlotte and Milbank Sounds and Dixon's entrance.

The scenery of this route both in British Columbia and Alaska has never yet been faithfully portrayed. Islands, mountains, inlets, and glaciers appear on every hand, and the eye is delighted at every turn by a constantly recurring succession of pleasurable surprises in the form of natural scenery sublimely grand. This is especially true of the passage through the Alexander Archipelago, with its thousand islands, mountain-crowned, and clothed to the snow-capped peaks, with a livery of emerald green. The islands are never out of sight, and the steamer is rarely ever more than three miles from land on either side during the whole distance.

To the right is the mainland of British Columbia; to the left the island which takes its name from the intrepid explorer Vancouver, who sailed into the unknown waters of the Pacific and charted the coast from California to Cook Inlet, Alaska.

Nowhere is the scene the same, barely even similar, though everywhere it is composed of mountains rising abruptly from the sea. Islands innumerable guard the waters of the inside channel from the storms of the Pacific.

Vancouver Island and the mainland behind Vancouver city teem with history. Here the Honorable Company of Merchant Adventurers trading into Hudson Bay had their scattered posts into which the factors collected the skins from the Indians whom they had brought under their sway.

At Alert Bay there are totem poles side by side with modern industries. Salmon canneries are in full swing in the summer, packing the fish, which goes across the whole world in ever-increasing quantities, from the host of canneries which lie along the whole of the coast to the north.

From Alert Bay the passage soon leads past Bella Bella and on Charlotte Sound, and the deep, land-locked harbor of Prince Rupert, the entrance to which is from the south—the exit to the north. Here in Dixon's Entrance is the channel by which ocean steamers may approach the mainland at this point of the coast. Once Dixon's Entrance is left behind there is no more open sea, in traversing Southeastern Alaska.

Almost immediately after leaving Prince Rupert, the ship enters into Alaskan waters.



Homesteads in Matanuska Valley, Alaska, About 40 Miles from Anchorage

Metlakatla. The first place of importance the traveler reaches after entering Alaska is Metlakatla, an Indian mission settlement, on Annette Island, 60 miles from the southern boundary, population 574 (1920 census). A regularly constituted village government is maintained; the public buildings compare favorably with the best in Alaska. At this place we get the first view of the Alaskan Indian; quite a different race from the red man as we know him.

He is smaller in stature and lighter in color and has none of that look as of rocks and mountain—austere and relentless—that our Indians have. He also takes more kindly to our ways and customs, and to our various manual industries. In reaching the land of the Indian we reach the land of the raven also. In the village they are everywhere and seem to act as the scavengers, like the buzzards in the South.

From Metlakatla the steamer proceeds to Ketchikan, the most southerly port in Alaska, the distributing center of an extensive mining region, rich in copper, marble, and other minerals. It is served by all steamers plying on the inside route.

Hydaburg is on the southwest coast of Prince of Wales Island, 85 miles due west of Ketchikan. It has a population of 346 (1920 census), practically all whites. The town consists of about 90 buildings, including two stores, cannery, saw and shingle mills.

There are schools, hospital, and a Presbyterian mission. Copper and gold mining is carried on at Copper Mountain. All kinds of wild game and fish are plentiful in this region.

Ketchikan is an incorporated town of about 5,400 (1921) with considerable business interests. It is the first port of call for steamers doing business with southeastern Alaska, which are required to make here entry of cargo and passengers. It has stores, six large canneries in the town, twenty-five canneries in the district, outfitting establishments, two cold-storage plants, saw mills, and is the commercial distributing point for regions contiguous. There are educational and religious institutions, water works, electric light plants, telephone service.

Craig. This town of 212 persons (1920 census) is in the same location and a little north of Hydaburg. It is reached by boats from Ketchikan and Wrangell. The population is white and mixed.

It is the business center of the west coast of Prince of Wales Island, and adjacent to one of the best fishing grounds of Southeastern Alaska. At Craig are located a U. S. Government wireless station, customs office, and Forest Rangers station. It has large and well equipped stores, bakery, machine shop, steam laundry, etc.



Top: Lane School, Nenana, Alaska
Bottom: Some of the Pupils

Wrangell is the next point reached, population, 821 (1920 census); named for Baron Wrangell who was governor of Alaska 1832-36; located on the island of the same name and not far from the Stikine River. It was once the chief trading station of the Hudson Bay Company.

Wrangell commands the entire trade of the Stikine River, which is navigable for about 150 miles. The region is rich in fisheries, timber, minerals, and furs. There is here also a native village, second in population to none of Southeastern Alaska, Sitka alone excepted.

Of paramount interest to visitors are the totem-poles which are here to be seen in perhaps greater number and variety than any other of the native settlements.

From Wrangell to Juneau, through Sumner Straits, Wrangell Narrows, Frederick Sound, Stevens Passage, and Gastineau Channel the distance is about 180 miles, the course, after leaving Wrangell Narrows, being along the coast of the mainland.

John Muir: "Through southeastern Alaska, the broad lofty mountains along the coast are usually laden with ice. The upper branches of nearly all the canyons are occupied by glaciers, which increase in size gradually and descend lower until the region which is highest and snowiest, between 56° and 61°, is reached, where a considerable number discharge fleets of icebergs into the sea.

This is the region of greatest glacial abundance on the west side of the continent. It is about 500 miles long, 100 broad, and probably includes nine-tenths of the ice on the coast."

Petersburg, at the north end of Wrangell Narrows, is a thriving community of 879 (1920 census). In the adjacent territory are many mineral properties under development. Attractions for fishermen and hunters are strong. Game animals, birds and fish in abundance.

Chief industries: Salmon, halibut, shrimp and crab fishing, and canning.

There are several up-to-date stores, two or three restaurants that can be recommended for tourists, and a good hotel.

In the immediate vicinity are black bear, brown bear, deer, wolf, mountain goat, some moose and caribou, as well as an abundance of ducks, geese, grouse, eagles, ptarmigan, etc., as also rainbow and other trout; shrimps, crabs, and clams in unbelievable quantities. The climate conditions are very agreeable and compare favorably in every respect with those of Oregon and Washington.

It is warmer than any place in the world of similar latitude. The summer with its 18 hours of sunshine per 24 and its daylight nights is, however, far above comparison with that of the Pacific coast states. The scenery surrounding is alpine in its beauty.

Among the numerous trips which may be made from Petersburg: A few minutes row is Petersburg Creek, which abounds in various kinds of game and trout all the way to its source. Petersburg Lake is 6 miles back; Brown's Cove, Point Agassiz, and Portage Cove, from 5 to 15 miles distant. Everywhere are lakes and creeks teeming with fish.

Kake. Population, 387 (1920 census), mostly natives. This town, which is on Kupraenof Island, 60 miles from Petersburg, contains about 50 buildings—three stores, Presbyterian

mission, and lumber mill. Its industries are salmon canning and making hair seal moccasins. Near the town are a garden vegetable farm and a blue fox ranch. In this region wild game and fish are abundant.

Tenakee is on Chichagof Island, 85 miles from Juneau, 75 miles from Sitka. Population, 174 (1920 census), includes about 30 natives. There are two salmon canneries in this vicinity.

The Le Conte Glacier, 15 miles distant, is the most southerly tidal glacier in the world. It can be seen at a distance of 20 miles and is easily accessible by steamer or launch. This glacier moves every 24 hours, with recurrent falls of blocks and



Alaska-Juneau Mine and Mill, Gold Creek

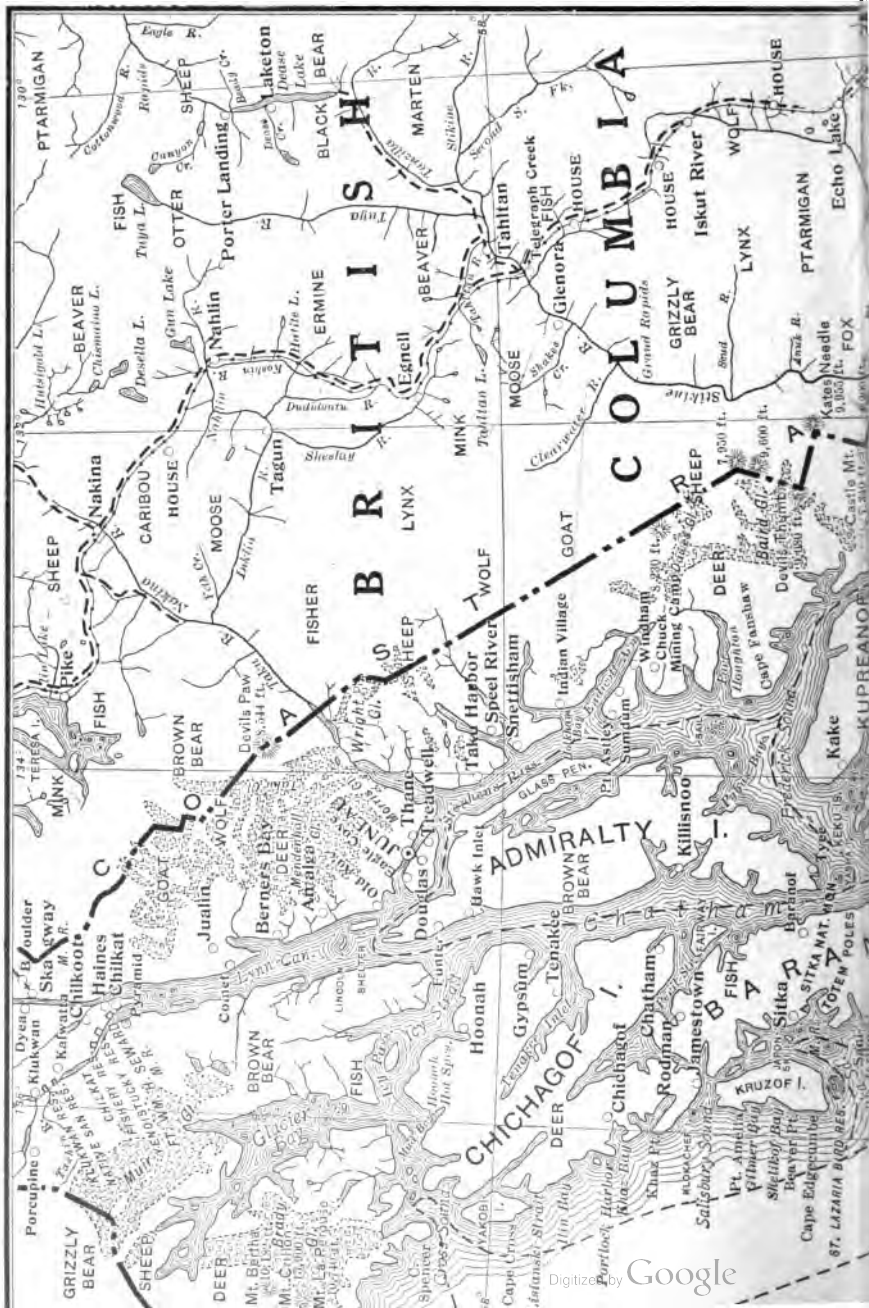
avalanches of ice accompanied by thundering roars and reverberations and tidal wave effects; indeed, this glacier is classed as one of the great natural wonders of the world.

Warm Springs on Baranoff Island, about seven hours distant by motor boat, contain the highest known qualities of sulphur and are noted for their curative properties for rheumatism, kidney, nervous, and blood disorders. There are good accommodations for sojourners.

On this latter trip may be visited one of the largest whaling stations in Alaska, as well as large canneries and salting stations.

Other interesting side-trips are by motor boats to the numerous Indian villages and fox farms where the blue and silver are bred for the fur.

Juneau, the capital of Alaska, is located at the head of navigation on Gastineau Channel, 900 miles north of Seattle, and is the metropolis as well as the capital of Alaska. Population,



3,058 (1920 census). It is in the very center of the greatest gold quartz mining districts of the world, many millions of dollars in gold having been added to the wealth of the nation from Juneau's mines.

Except for the narrow confines of Gastineau Channel, Juneau is wholly surrounded by towering mountains that for physical grandeur and majestic beauty are unsurpassed in America and unexcelled in the world.

Many of her mountain peaks have never been crested by animal life save that of eagle's wing. 'Tis here that raging torrents race riotously down the almost perpendicular declivities in the good old summer time—awesome, magnificent, and unbelievably grand.

Mendenhall Glacier can be reached in an hour over a good road, being but sixteen miles distant from the city. Within a three-minute walk after a delightful auto ride of an hour after leaving Juneau, sightseers may cool their hands on the blue ice of old Mendenhall.

Autos are always in waiting on the arrival of steamers during the tourist season. The trip to the Glacier is made along the shores of a long but shallow continuation of Gastineau Channel, the splendid highway being fringed with improved farms, large dairies and hay ranches that cause visitors for the time being to forget that they are in Alaska.

Taku Glacier, located thirty-five miles from Juneau, accessible by either steamer or small boat, is another of Nature's marvels. Its solid front of blue ice towers about 250 feet above the waters of Taku Inlet and glistens like diamonds in a diadem.

An irresistible force from behind keeps the mountain of ice constantly moving toward the water by which its lower portions are undermined and melted away, causing the over-hanging walls to give way with cannon-like roars, and drop into the water beneath—a sight once witnessed never forgotten. As scenic assets, the glaciers near Juneau are among her most valuable.

Gold Creek Canyon. Ten minutes' walk or five minutes by auto will enable the tourist to reach Gold Creek Canyon after landing at any of the Juneau docks.

The canyon is a narrow defile between towering snow-capped mountains and is similar in beauty and grandeur to the world-famed Grand Canyon of the Colorado. Gold Creek Canyon is skirted by board walks and a well-kept auto road. For four miles up this panoramic vista one delight is succeeded by another, the highway ending at Perseverance Mine, where gold mining operations are carried on in no less than thirteen levels

and where all ore mined is loaded into cars by the gravity system, a powerfully equipped electric railroad terminating in the thirteenth level from which the ore is hauled to the Alaska-Gastineau Mill, seven miles distant from the mine. A trip to and through the Perseverance Mine is never forgotten by the "chechacko" (tenderfoot).

The Alaska-Gastineau Mill, and that of the Alaska-Juneau, the latter being located only a few hundred yards from the Juneau docks, are credited with being the most modern mining mills in the world.

They are both operated by electricity and each has a capacity for milling 12,000 tons of ore every twenty-four hours. They must be visited to be understood and appreciated.

Between the Alaska-Gastineau and Alaska-Juneau mills, but on the opposite side of the channel, on Douglas Island, is located the world-famed Treadwell group of mines, from which about \$65,000,000 have been taken since they were opened up thirty-five years ago.

Three of the four mines of the Treadwell group were flooded three years ago, but the fourth, the Ready Bullion, is still operating and is one of the heavy producers of Alaska.

Douglas and Treadwell are reached by an hourly ferry service from Juneau.

If tourists are unable to arrange to stop over for a period at Juneau, they should insist and see to it that the steamers on which they travel arrive at Juneau and remain for several hours in daylight. The capital city will furnish the attractions.

Juneau supports a daily newspaper, banks, assay office, and cable connection with Seattle.



\$1,500,000 Steel Bridge, C. R. & N. W. Ry. at Miles Glacier

Auto Service and Rates. To Mendenhall Glacier and return, time about 2½ hours; minimum rate, \$10; four passengers allowed; all over four, \$2.50 each.

To Perseverance Mine and return, time about two hours; minimum rate, \$10; four passengers allowed; all over four, \$2 each.

The Juneau Commercial Association gives assurance that the above rates are reasonable.

The Territorial Historical Museum, embracing the greatest and most nearly complete collection of Eskimo curios now in existence with the possible exception of that of the Smithsonian Institution at Washington, D.C., is now open to the public at the territorial capital, Juneau. The collection consists of upward of 20,000 different articles and represents ten years' work by Daniel S. Neuman, who spent a decade on the coasts of Bering Sea and the Arctic Ocean. The museum is in charge of Rev. Fr. A. P. Kashevaroff, a priest of the Greek Catholic Church and himself a native of Alaska, having been born in Sitka while Alaska was yet Russian territory. The museum is beyond doubt the most interesting of all the many beauties and wonders Alaska offers her many visitors.

Mount Juneau, Mount Roberts, and Mount Jumbo, all rising about 3,500 feet directly from sea level, are all easy of access and can be easily climbed, although guides should be taken.

Turner Lake, claimed to be not surpassed by Lake Louise, Taku Glacier, Norris Glacier, Taku Inlet, Tracy Arm, and Grindstone and Rhinestone creeks can all be reached by small boats within one to two or four hours.

Comfortable gasoline vessels can be chartered for from \$15 to \$25 per day to make these trips. Salmon Creek Dam, one of the largest reservoir dams on the continent, can be reached by a pleasant walk from the mouth of Salmon Creek, the latter being reached by automobile.

There are hot springs at Tenakee and Sitka. Trips can also be made from Juneau to the Alaska-Juneau Mine, which is practically within the city limits; to the Alaska-Gastineau Mines and to the Alaska Treadwell Company Mines on Douglas Island, connected by ferry with Juneau.

The average temperature in July is 57.8°. The mean rainfall precipitation in June, the average driest month, is 3.92 inches.

Deer, goats, bear, wolves, and sheep can all be obtained within a short distance of Juneau. There is also fishing in practically all the streams, and trolling and other deep sea fishing can be engaged in in all the inlets and channels. Grouse, ptarmigan, ducks, and geese are also in abundance in this vicinity.



Alaska Silver Fox in Captivity

There are four distinct areas within easy access to Juneau which are particularly available for farming purposes, to wit: Mendenhall Valley, Taku Glacier Valley, Eagle River Valley, and Strawberry Point. Stock, dairy and strawberry raising so far have proved to be most suitable to engage in. The shores of countless smaller bays and valleys will also in time be taken up for these purposes; as on nearly every one the chief investment used by the homesteader is labor, as he can make his living off the land, and there is always an abundance of game and fish to be obtained.

During twenty-seven years of weather reports the figures show that at no time during eleven of those years did the temperature rise above 80° F., and in fourteen years of that time it did not go below zero, and in seven years, it did not go below 7° above zero.

The longest day is 18 hours, 20 minutes at Juneau, and all through June, July, and August the days are exceedingly long. It is no uncommon thing to have a baseball game up to as late as 10.00 p.m.

Prospective investors would do well to look into the possibilities of the paper and pulp, fisheries, cold storage, fish by-products, mines, and timber industries.

There are no such things as cyclones or dust storms, and even heavy thunder storms do not occur here. There are neither any snakes nor poisonous spiders.

Leaving Juneau the steamer rounds the southerly end of Douglas Island and heads on through Saginaw passage into Lynn Canal, finally arriving at Skagway, at the head of the canal, the limit of salt water navigation in that direction.

Thane. Here is located the Perseverance mine, referred to herein under heading "Juneau." Population, 421 (1920 census).

Hoonah is on Chichagof Island. The population, 402 (1920 census), is 90 per cent natives. There are several stores, a cannery near-by, water and lighting system, U. S. Government school, Presbyterian and Greek churches, and saw mill. Three farms within five miles raise vegetables, chicken, cattle, rabbits, etc. As in all parts of this region there are game and fish in plenty.

Haines. Population, 314 (1920 census), is a few miles south of Skagway on the east shore of a long narrow peninsula lying



Rye and Oats, Hot Springs, Alaska

between Chilkoot and Chilkat inlets. It is the outlet of the Porcupine mining district in Alaska and of the Rainy Hollow mining district in British Columbia, to each of which a wagon road extends.

Fort William H. Seward, headquarters of the army in Alaska, adjoins the town of Haines.

About two miles distant from Haines is Pyramid Harbor where there is a large salmon cannery. Tourists, on ships which call at Haines, visit this interesting activity while waiting for the steamer to discharge and take on cargo.

Within a radius of fifty miles from Haines there are several native villages, the whole containing in the aggregate a larger native population than is embraced within the same limits elsewhere in Alaska.

Skagway, located at the head of Lynn Canal, although small in point of population, 494 (1920 census), is one of the most

important towns in Alaska. It is the only gateway to the great interior, affording access by rail and connecting river steamers to all of the principal mining centers in the interior of Alaska and the Yukon Territory contiguous to the Yukon River and its tributaries. Skagway can also boast of having the first railroad built in Alaska—the White Pass & Yukon Route.

No town in Alaska, with the exception of Dyea—now deserted—is so closely and intimately associated with the great gold rush to the Klondike in 1897 and 1898. For here came men by the thousands—most of them to begin their toilsome climb over the Summit of White Pass; thence to brave the dangers of Miles Canyon, White Horse Rapids, Five Finger Rapids, and Rink Rapids. Few towns have ever been any wilder than Skagway was in the days of '97 and '98—but that has now passed into history. Today Skagway is as law-abiding a town as one will find anywhere. And, too, it is a modern little town. It has an electric light and telephone system as well as water works. There are churches, schools, fraternal orders, a daily newspaper, good stores, including one of the largest, if not the largest, curio shops in Alaska and very good tourist hotels.

The U. S. Government cable connects Skagway with Seattle as well as with other telegraph stations in Alaska.

The White Pass & Yukon Route maintains a telegraph service between Skagway and White Horse where connection is made with the Canadian Government telegraph line.

The several thousand tourists who visit Skagway every summer have spread its fame as a city of flowers far and wide, for nowhere in Alaska are there more beautiful flower gardens than here.

There are many points of interest in the vicinity: Mt. Dewey, Lower and Upper Dewey Lake, A. B. Mountain, Reid's Falls, Reid's Monument, Denver Glacier, old deserted Dyea, and he who likes "hiking" or mountain climbing will find many interesting trails.

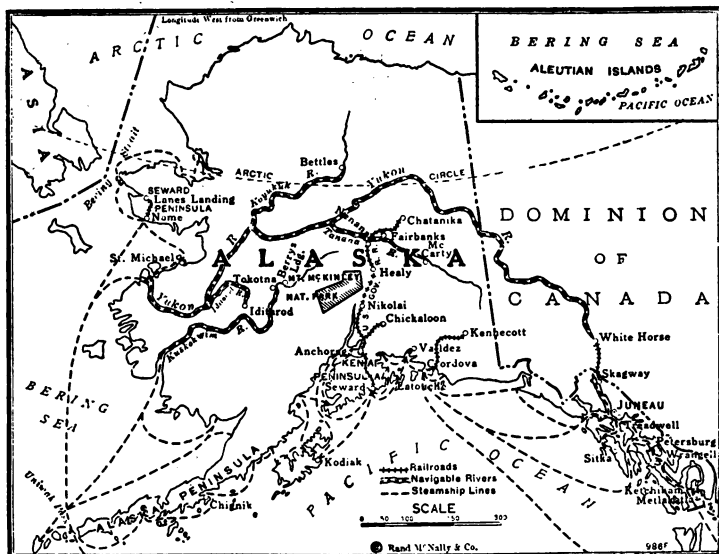
The White Pass & Yukon Route operates a daily, except Sunday, train service between Skagway, Carcross and White Horse, connecting, during the season of navigation (from about June 1 to October 10), with the steamers of the White Pass & Yukon Route at Carcross for the beautiful Atlin Lake country and at White Horse for Dawson in the Klondike.

The tourists visiting Alaska will find the trip to Dawson and Atlin of exceptional interest and scenic grandeur. The route followed is that taken by the gold seekers in '97 and '98.

From the parlor observation car, or the deck of the steamer, one may view the ever-changing panorama of wild, rugged mountains, wondrously beautiful lakes, rushing mountain torrents, cascades, water falls and glaciers, and at the same time enjoy the comforts of modern travel conveniences. Detailed description of the trip by rail to White Horse and the trip to Atlin, Dawson, etc., will be found on page 143 and the following pages.

Pursuing the journey westward, the ship heads back through Icy Strait and into Chatham Strait, a long channel, averaging 6 miles wide, between the Admiralty, Chichagof, and Baranof Islands, landing finally at Killisnoo, population, 256 (1920 census). During this sail the ship passes not far from the native village of Hoonah on the north of Chichagof Island, population, 402 (1920 census), and Hunter Bay and the native village of Angoon, population, 114 (1920 census), both the latter on Admiralty Island.

Killisnoo is located about midway between Juneau and Sitka on the most direct route, and adjacent to waters literally alive with cod, halibut, and herring. Killisnoo's industry is in oil works, with an annual capacity of 250,000 gallons pressed at a temperature of 12° , and 1,500 tons of guano, prepared from the refuse of the herring from which the oil is extracted.



Map of Alaska Showing Railroads, Navigable Rivers and Steamship Lines



Top—A Corner of a Skagway, Alaska, Garden

Bottom—Some Skagway Nasturtiums That Grew over 25 Feet in a Season

To make 200,000 gallons of oil involves a catch of not less than 60,000 barrels of herring.

Directly opposite Killisnoo is the entrance to Peril Strait through which the ship next threads her way in intricate channels and seething rapids to Sitka, a distance of about 80 miles.

Sitka, population, 1,175 (1920 census), occupies a site at the head of Sitka Sound on the west side of Baranof Island, 980 miles from Seattle. It enjoys the advantage of a safe and commodious harbor formed by numerous small wooded islands which afford ample protection against the prevailing westerly and southerly winds. It was settled in 1802 by the Russians.

Charles Keeler, writing of this region, says: "If the eagle seems to belong to these solitudes of the Northwest, another bird, which we found equally abundant as far north as Juneau and Sitka, seemed singularly out of place. Indeed, even after reading that the tiny rufous humming bird journeyed so far into the northern wilds, it was with almost a shock of surprise that we saw the dainty creature contentedly buzzing about the salmonberries, and appearing as unconcerned and happy as if his fine wings had not carried him some thousands of miles from his winter quarters in Southern California or Mexico. I cannot imagine a more wonderful instance of bird migration than this—one of the smallest known birds, no larger than a fair sized moth, yet with strength, endurance, and intelligence to travel up and down the greater part of the North American coast line, pressing close upon the train of early spring, awaiting only the blooming of the wild currant in California, and the salmonberry farther north to venture upon his perilous way. All hail to thee, little pioneer. . . . You answered the beckoning little blossoms and followed them . . . even upon the threshold of the ice-king's domain."

The walk to Indian River, a beautiful stream, over a road which winds its way around the shore under an almost continuous bower of evergreens and around the connecting trail to the falls, will impart to the visitor a lasting impression of the beauty and grandeur of an Alaskan forest and the limpidity of Alaska's flowing fountains.

Sitka is the seat of a mission and industrial school maintained by the Presbyterian Board of Home Missions.

Interesting things for tourists are the old Greco-Russian Cathedral, with its chime of bells and rare valuable paintings, many of them embellished with precious stones; and the draperies of beaten gold and silver, which were presented to the church many years ago by Russian nobility as marks of their devotion to the faith, and regard for the men who had



Potato Patch, Hot Springs, Alaska

consecrated their lives to the promulgation of their faith among a heathen people, and Sitka National Park with its Totem Poles, the native village, the two canneries and the cold storage plant, the fishing fleet operating from this port, and the Presbyterian school for natives.

At this place are located the headquarters of the Agriculture Department for Alaska, the Pioneers' Home, and the Government's magnetic observatory. There is a Greek church built more than fifty years ago which contains valuable paintings and other treasures, also the Sheldon-Jackson Museum, which has many interesting curios.

The game animals in this section include bear, deer, ducks, geese, swans, several species of grouse and ptarmigan, all of which are plentiful. Fishing is open and ideal all the year round. King Salmon trolling with rod and line furnishes more excitement and thrills per minute than any such sport in the world; trout, including rainbow, cut-throat, mountain, and salmon are plentiful in the many creeks and lakes near Sitka, and the fishing is best during June to September, inclusive. Halibut may be caught the year round.

Looking landward from the ship, to the right, there are to be seen Mounts Fairweather, Crillon, and La Perouse; and to the left, majestic awe-inspiring St. Elias rises to a height of nearly 19,000 feet, their snow and ice-clad peaks crowned with halos showing all the colors of the rainbow, and the whole constituting a scene at once sublimely grand and beautiful. The elevations of these mountains above sea level vary from 13,500 to 19,000 feet. Lying between the base of this range and the seashore

to the southeast of Yakutat is a strip of comparatively level land, perhaps 20 miles in width, which is heavily timbered.

Mulgrave Harbor is to the right of the entrance to the bay, and on the north side is the native village, population, 165 (1920 census). These inhabitants are not unlike those of Sitka, speak the same language, and live in houses similarly constructed. A few frame houses with a store and postoffice make up the village.



Copyright by E. H. Harriman

Painting by R. Swain Gifford

Mt. St. Elias from Yakutat Bay

The scenery in the neighborhood of Yakutat Bay, and indeed all along the coast as far west as Cook Inlet, is most impressive, quite equal in beauty and grandeur to that of the inland passages in Southeastern Alaska.

In Yakutat Bay and its extension known as Disenchantment Bay are the Lucia, Turner, and Hubbard glaciers; and in a water extension which runs back and parallel to the two bays and known as Russell Fiord are Nunatak and Hidden glaciers. West of Yakutat a few miles is the largest of the Alaska glaciers, Malaspina, covering 1,500 square miles.

Malaspina Glacier has a front of 50 miles on the sea and runs back 30 miles to the St. Elias Range from which it is fed. It is a vast plain of ice with lakes and rivers, and with hills of rocks and gravel that have trees and alders growing upon them. The discharge of roily water from beneath it is so great that it colors the sea over an area equal to its own.

In this vicinity may be witnessed the process of salmon canning and the operation of the wonderful "iron chink."

Fish caught are put in this establishment just as they come out of the water. They leave this establishment in cases of one-pound cans, 60 cans per minute, never having been touched by hand except when inspected.

Prince William Sound is a deep indentation of the mainland, the entrance to which is like the delta of a great river, because of the many islands which block the passages. The sound, which is likewise crowded with islands, and covers an area of something over 2,500 miles, was first explored by Captain Cook during the last voyage in 1778. It is surrounded on the north and east by the mountains of the Coast Range and on the west by the Kenai Peninsula. The many indentations of the coast line on the north, east, and west protected by the outlying islands in the south, form natural harbors for the largest sea-going vessels; harbors that are ice-free throughout the year.

Port Wells, the extreme northeastern arm of Prince William Sound, using the words of John Burroughs, "is another great ice chest—glaciers to right, glaciers to left, glaciers in front—volley and thunder. The mountains are ribbed with them and the head of the bay walled with them. Five can be seen at once; they are separated by intervals of a few miles. The two large ones at the head of College Fiord are the Harvard and Yale; the cascading glaciers on the west side are Radcliffe, Smith, Bryn Mawr, Vassar, and Wellesley, and the main glacier on the east side is Amherst.

Harriman Glacier is located at the end of Harriman Fiord, discovered and named by the Harriman Alaskan Expedition in 1899.

Cordova. Situated at the head of Orca Inlet, an arm of Orca Bay, in the eastern shore of Prince William Sound; the terminus of the Copper River and Northwestern Railway, which extends 197 miles to the Kennecott copper mines in Chitina Valley. From Chitina, 130 miles from Cordova, a wagon road extends to Fairbanks, a distance of 317 miles. This road is traversed by autos in summer and sleighs in winter. Cordova is the center of an extensive fishing industry; population, including Eyak, 1,309 (1920 census). The town is well supplied with modern improvements, hotels, streets, banks, water and electric light systems, etc., and is the headquarters for supplies for Latouche, Ellamar, Chitina, McCarthy, Chisana, Kennecott, and Strelna. Also the Katalla and Yakataga oil districts, Bering River coal fields, and Nizina, Kotsina, Nabesna, and Shushanna mining districts. Cordova claims the finest harbor from a naval standpoint in Alaska.

There are nine salmon canneries and two clam plants and one crab canning plant in operation. Mining machinery of all kinds is manufactured. It is the headquarters of the Chugach Forest Reserve. The thermometer has rarely been known to reach as low as zero.

THE COPPER RIVER & NORTHWESTERN RY.

The Copper River & Northwestern Railway which penetrates the Copper River Valley to a distance of 200 miles from Cordova, maintains train service, modern and first-class in every respect, with rolling stock and power of the best. The roadbed is rock-ballasted and carrying 70-pound steel rails; the trains carry a dining car. Four huge steel bridges, spanning rivers and gorges, were built at a cost of over \$2,500,000.

From Mount St. Elias and Mount Logan (18,000 and 19,500 feet in height) there stretches westward for a distance of over 500 miles the grandest and most rugged of the coast ranges, broken only by the gorge of the Copper River. On the slopes of this range are formed the largest glaciers in the world, excepting only the polar ice sheets. To the north and skirted by the Copper River rise the Wrangell Mountains, with numerous peaks and volcanoes from 14,000 to over 16,000 feet in height. Both the tourist over the railway and those coming from the Interior of Alaska over the Chitina-Fairbanks road enjoy scenes of beauty and grandeur unsurpassed. Tourists make this trip via Skagway by the White Pass & Yukon Route and down the Yukon by way of Dawson to Fairbanks, thence over the government automobile road to Chitina, thence via the Copper River & Northwestern Railway to Cordova.

The Richardson Highway stretches south from Fairbanks to the Alaska Coast at Valdez and Cordova. From Fairbanks the direction is southward, up the Tanana Valley, passing prosperous looking farms on the outskirts of the town. It lies along the U. S. Signal Corps telegraph lines the entire distance, and as practically all the roadhouses are equipped with telephones leading to the various offices along the route, one is never out of touch with the outside world.

The trip by automobile can be made in 2½ days, a distance of 370 miles.

Sixty miles from Fairbanks is Birch Lake filled with pickerel and white fish, the former ranging in size from the smallest to savage 40-pounders.

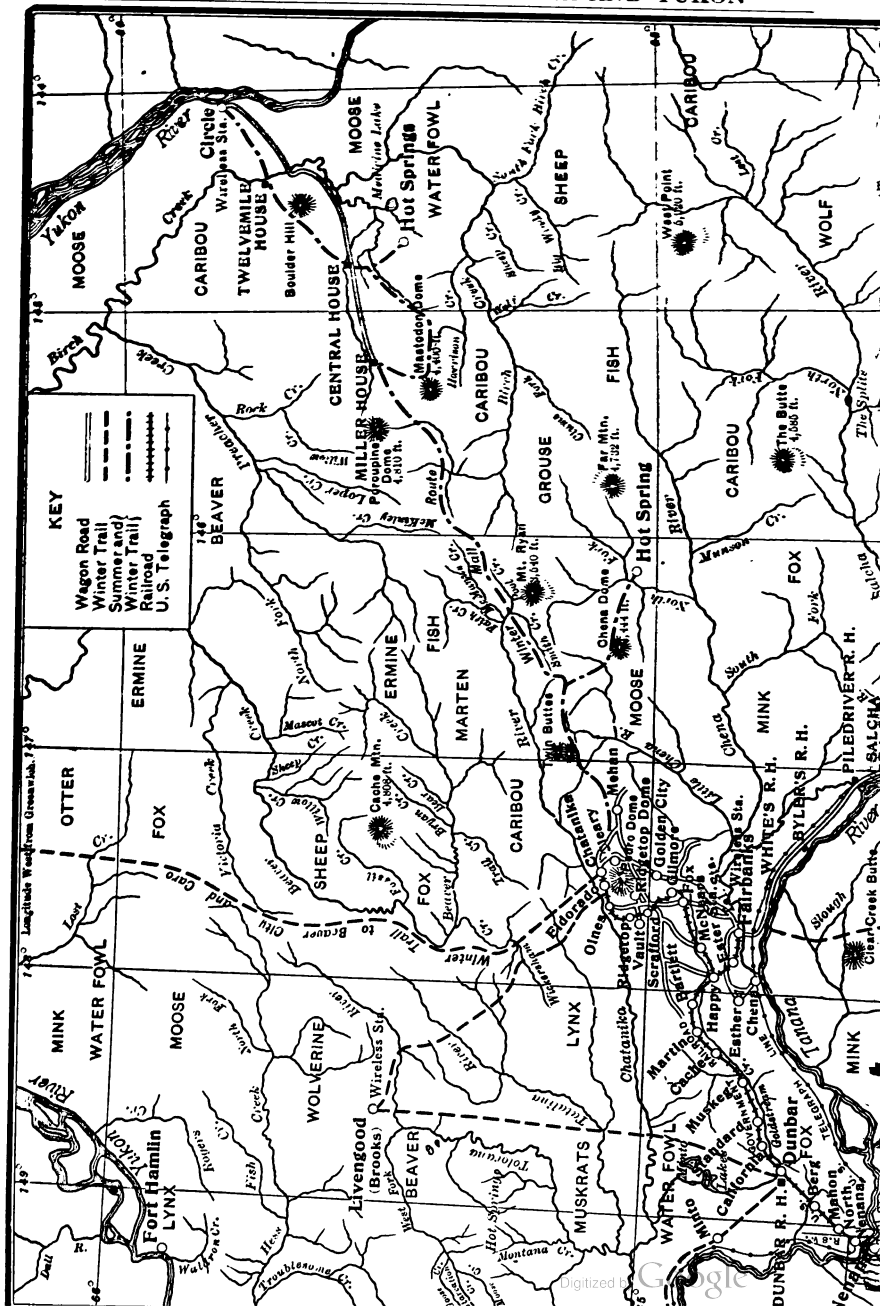
From Birch Lake the route is through Richardson, a small trading post on the banks of the upper Tanana River, where there is a post office, telegraph office, roadhouses and several

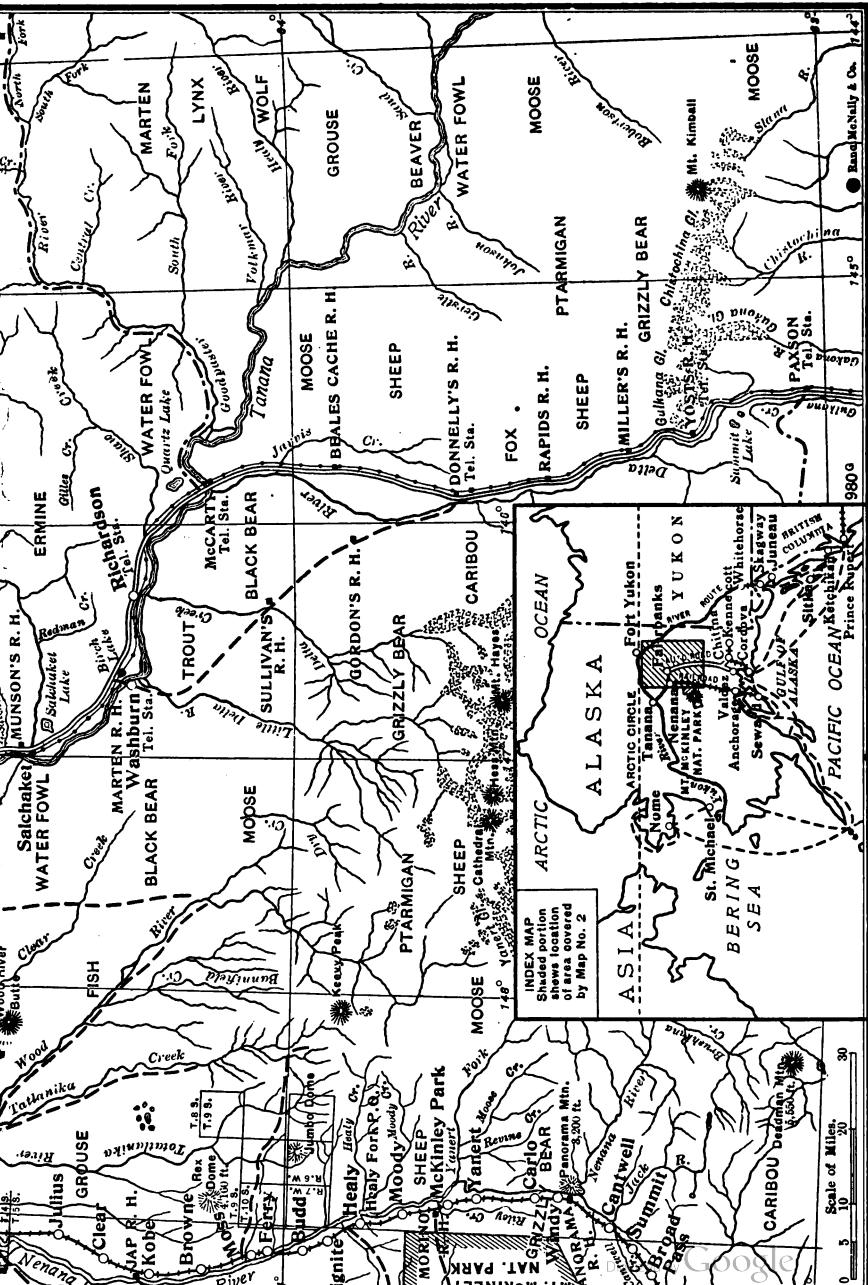
stores. At McCarty the highway crosses the Tanana River, a ferry being located there. From there the route turns up along the Delta River and on by Donnelly telegraph station, Flannigan's Roadhouse. At Summit Lake, one of the prettiest inland bodies of water in Alaska, lurk lake trout weighing as much as 35 pounds. Down the wooded benches of hills winds the road, giving glimpses here and there of the steeply descending Gulkana River. Off in the distance may be seen the towering head of Mt. McKinley, and as one approaches the coast Mt. Drum, Mt. Wrangell, and Mt. St. Elias loom up from tablelands dwarfing the intervening foothills and mountains by their majestic heights. At Copper Center, population, 71 (1920 census), the famous Cooper River is bridged and the road again ascends the plateau and stretches ascending and descending gentle declivities to Willow Creek where one branch of the road turns off to Chitina and the Copper River and Northwestern Railway, the other leading into Valdez. By going by automobile direct to Valdez one crosses the Coast Range of mountains, with its rugged mountain scenery that has no equal ascending and descending in long winding courses over benches, crossing through and over on bridges numerous glacier streams, passing close to large glaciers and parallel to the famous Keystone Canyon into the town of Valdez which is located in one of the most picturesque spots in Alaska.

Those taking the highway route from Fairbanks to Valdez should not fail to take a side trip out of Cordova over the Copper River and Northwestern Railway up to McCarthy, population, 127 (1920 census). This is one of the wonder scenic routes of the North, passing the famous Miles and Childs glaciers. The railroad runs along the Copper River for a great distance and its construction is not the least interesting of the objects encountered on the trip. The railroad connects the great Kennecott copper mines with tidewater at Cordova.

This same trip is available for those who desire to come from Fairbanks over the Richardson Highway to Chitina. From Willow Creek to Chitina are many things of interest to repay the traveler and it compares favorably with the Willow Creek-to-Valdez route.

Kennecott. This is the inland terminus of the Copper River & Northwestern Railway, a town of 494 (1920 census). The Kennecott copper mines, reduction plants and shops compose the town, in which there is a postal savings bank, hospital, public schools, water and lighting systems. Potatoes, rutabagoes, hay, etc., are raised on ranches seven miles from town.





McCarthy P. O. (Shushanna Jct.). Located on Copper River & Northwestern Railway, 191 miles from Cordova, and surrounded by snow-capped mountains and glaciers which excel in grandeur anything in Switzerland. This town is the outfitting point for big game hunters going into the White River country, 80 miles distant. Principal scenic attractions hereabout are Great Canyon of the Chittistone River, Icy Lake, and the Pot Hole at McCarthy. The Commercial Club recommends the following: Time for sightseeing, May 1st to October 1st; fishing, June 1st to October 1st; hunting bear, April 15th to June 1st; other big game during open season, which, north of 62° latitude, opens August 1st, and south thereof August 20th. There are sheep, moose, caribou and goat; also some grizzly and black bear. Hunting parties headed for White River country should reach McCarthy early in August.

Valdez. Located at the head of Port Valdez on the north shore of Prince William Sound; population, 466 (1920 census). The ocean terminus of the Valdez-Fairbanks auto road, which at Willow Creek connects with the route from Chitina. The scenic attractions via this route are on a par with those on the Copper River & Northwestern Railway to Chitina. Port Valdez, the most northerly ice-free port in Alaska, is the headquarters of gold quartz mining and industry and its trade extends to all the mines of the numberless islands and inlets of the sound. It is a modern town with stores, banks, a good water supply, electric lights, etc.

Latouche. Population, 505 (1920 census), 10 per cent of which is native. It is on the north end of the island of the same name. There are paved streets, a hotel, restaurants, room-houses, several stores, safe deposit bank, telegraph, 'phone, water and lighting systems and five fish canneries. The garden patches in the town raise every variety of common truck.

Montague Island, the largest island in the Prince William Sound group is 85 miles by an average width of 9 miles and entirely uninhabited by reason of the ferocity of the brown bear which holds forth thereon. It is of the same species and aggressive ferocity as the Stikine River (Southeastern Alaska) bear. Sportsmen who would seek a finished combat with this particular fighter will find Latouche the logical starting point. It is said, however, that the Stikine bear is not hunted by the best Indian hunters.

Seward. The southern terminus of the government railroad under construction to Matanuska coal fields and Fairbanks

is located on Resurrection Bay, a magnificent deep water inlet on the south coast of the Kenai Peninsula. It is also the starting point for the steamer which makes monthly trips to all the ports along the Alaska Peninsula as far as Unalaska, a distance of 1,146 miles. Seward is the outlet for the quartz and placer mines of the Kenai Peninsula and has a valuable fishing industry. It is a flourishing town with a population of 652 (1920 census), with several hotels, good stores, a bank, good water supply and electric lighting system.

The Government Railroad in Alaska passes through 540 miles of virgin country, full of interest from a scenic standpoint. Starting at Seward on beautiful Resurrection Bay, inclosed by picturesque mountains and evergreen forests, the road climbs the south slope and crosses the Coast Mountains, and passes through an interior valley, following the shores of Kenai Lake, a beautiful body of inland water. In the summit district of the Kenai Mountains the road winds down from an elevation of 1,100 feet to sea level in a long double loop, passing very close to gorgeous glaciers, through rocky tunnels, and in view of mountain scenery unsurpassed in any part of the world. The road skirts along the northern shores of Turnagain Arm with high mountains on the one hand and the sea on the other, to Anchorage, head of navigation on Cook's Inlet, and Government Railroad headquarters.

Leaving Anchorage, the road pushes northward to Nenana and Fairbanks, through the Matanuska, Susitna, and Tanana valleys, already awakening to their agricultural possibilities as evidenced by little farms springing into view. Two branch lines take the visitor into the coal fields around Chickaloon and the gold fields north of Fairbanks.

The streams abound with trout, grayling, and white fish beyond the fondest dream of anglers, and the caribou, mountain sheep, moose, and bear in countless number roam the northern slopes of the Alaska Range, making this section of Alaska a paradise for sportsmen.

O'ershadowing all other scenery in grandeur stands Mount McKinley, nearly four miles high, visible for 300 miles from the railroad, crowned, as it is, monarch of North American mountains by eternal snows.

Anchorage, the third largest town in Alaska, is government-owned with population, 1,856 (1920 census), on Cook Inlet at Turnagain Arm. Practically every religious denomination is represented; all the principal fraternities have chapters here; schools second to none in the Territory; electric light, water,

and sewer system, a paid fire department, two banks, two theaters, daily newspaper, and a chamber of commerce. The average temperature of the district for June–August is 65°, with an average for these months of sixteen to eighteen hours' sunshine per day. The principal resource is coal. Vegetables and strawberries have generous yields; barley and wheat mature and oats produce prolifically. Rainbow trout, Dolly Varden trout, grayling, and white fish are plentiful. Anchorage is the trade center of the Cook Inlet and Susitna region.

Points of interest: Spencer Glacier, on Government Railroad, four hours distant, in a picturesque region; Old Kink reached by launch in two hours; historic old Russian church. The U. S. Government is operating two coal mines fifty-seven and seventy-four miles north of Anchorage. The former is furnishing coal for the construction and operation on the railroad; the latter for coal for the Pacific Fleet of the U. S. Navy.

Talkeetna. On the U. S. Government Railroad 227 miles from Seward with population, 70 (1920 census), has telegraph and 'phone service. On near-by farms are raised potatoes, turnips, cabbage, beets, carrots, celery, peas, strawberries, etc. The Cache district gold mines are 40 miles west.

Resurrection Bay. Extends north and south about 16 miles with a width of from 3 to 5 miles. It is mostly surrounded by high precipitous mountains which with certain exceptions extend to the water's edge.

Kenai, population, 332 (1920 census), is on the east shore of the inlet at the mouth of Kaknu River. It is a center of considerable fishing and agricultural activity.

Kodiak (called by the Russians St. Paul), population, 374 (1920 census). It is composed of Indians, half-breeds, Russians, and a few Americans, who live in comfortable frame cottages, generally with a small garden attached. For here is a region of birds, of blooming wild flowers, of grasses and groves of low fragrant spruces, of vistas of distant mountains capped with snow and the usual Greek church. The people fish and hunt the sea otter.

"The mighty emerald billow that rises from the rear of the village! The climber soon finds himself knee deep in ferns, grasses and a score of flowering plants. The wild geranium here is light blue, and on the summit may be found a most exquisite forget-me-not of a pure delicate blue with yellow center, a lady's slipper, pale yellow striped with maroon; and here the dwarf

rhododendron, and patches of lupine, bluebells, Jacob Ladder, iris, saxifrage, cassiope, and many others. And here are numerous birds, notably the golden-crowned sparrow, the little hermit thrush, pine grosbeak, gray-cheeked thrush, and the Oregon robin."—John Burroughs.

Bidarkas. In this region are seen the first bidarkas, small boats made of seal or walrus hides stretched over a light wooden frame. They are made by first constructing the frame, in which there is neither mortise, tenon, or scrap of iron—the several parts being securely tied together with sealskin thongs, after which the hides, properly prepared and sewed together are stretched tightly and completely over the frame, except a round hatch left in the top center for the occupant. Around the projecting rim of this opening the user ties the lower end of a waterproof shirt made from the intestines of the seal, and which is called a kamalyka. This shirt is supplied with a hood which is drawn closely around the neck and likewise secured at the wrists and thus the water is prevented from getting into the body of the boat. Bidarkas are made in three sizes, with one, two, and three hatches and are called by the natives yaks, bidarka being the Russian name.

From Kodiak the route extends through a narrow strait between Kodiak and Spruce Islands into Marmot Bay, at the head of which are the Creole and Kanaig settlement of Afognak, population, 308 (1900 census), on an island of the same name. At the west end of the narrow strait referred to is the little Creole village of Oozinki. All the houses in the Creole settlement have gardens attached in which the inhabitants grow their own vegetables.

Leaving Afognak, the course is north, passing inside of Marmot Island and heading to the westward of Barren Island, which are located about midway between Cape Elizabeth and Cape Douglas. Sailing on northward, leaving Augustine Island and volcano to the right, there is during the day a fair view of Illiamna and Redoubt volcanoes, the former of which has been more or less active for over a hundred years, and has never ceased to emit smoke and ashes.

The next important water way encountered, heading toward the west is Cook Inlet wherein the tides are perhaps more violent and rapid than at any other point on the Pacific Coast. They at times run at the rate of 8 to 10 miles an hour with an average rise and fall of 25 to 28 feet. The distance from the

entrance to the head of the inlet is about 200 miles. Large steamers dock at Anchorage on Knik Arm.

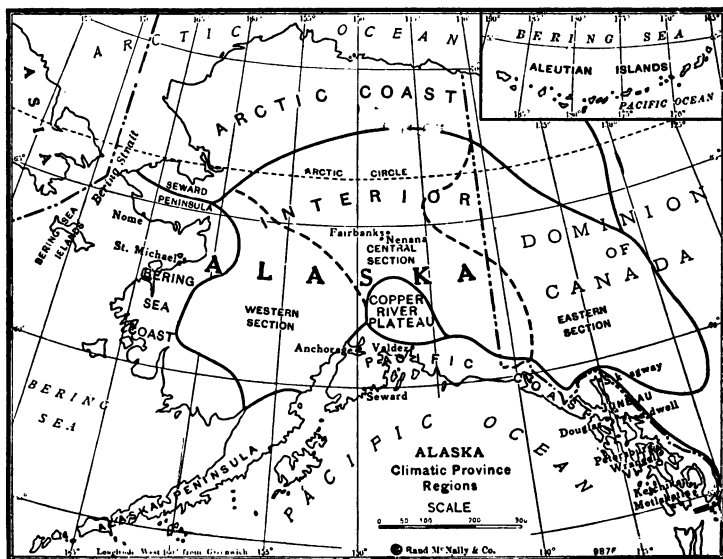
Alexandrofsky. At Graham Harbor is the old Russian settlement of Alexandrofsky, and a few miles north thereof is Seldovia, population, 258 (1920 census).

Along the coast from Cape Elizabeth to Copper River on the east, on the islands of the Kodiak Archipelago and along the whole water from way around to where the eastern boundary line intersects the Arctic Ocean, and on a large part of the Alaska Peninsula, are found Eskimos only, the Athabaskans being hemmed into the interior at all points save the one named above.

The waterway which separates Kodiak and Afognak Islands from the Alaska Peninsula is the route the ships take to Karluk, population, 99 (1920 census), the seat of the largest canning industry in Alaska. The scenery throughout this strait is indescribably grand and awe-inspiring.

Karluk is at the mouth of the river of the same name on the southwestern side of Kodiak Island. Here are a half dozen or more canneries.

The white population of Karluk is augmented during the canning season by whites and Chinamen who come up from



Climatic Regions of Alaska

San Francisco, Seattle, etc., in the early summer and return in the fall.

The Katmai National Monument. This volcanic region is in the Aleutian Range, on the Alaska Peninsula, facing on Shelikof Strait, which latter separates Kodiak Island from the mainland.

Its boundaries extend from Cape Kubugakli (the south point of entrance to Katmai Bay), northwest 32 miles, thence north 26 miles, east 10 miles, southeast 52 miles to the shore of Shelikof Strait, and thence along the coast 55 miles to place of beginning. The area is approximately 1,088,000 square miles.

"Valley of Ten Thousand Smokes" extends through the center of this region. The National Geographic Magazine of February, 1918, says: "Nothing approaching it has ever been seen by the eye of man . . . indeed if one could pick up all the other volcanoes in the whole world and set them down together, side by side as close as they would stand, they would present much less of a spectacle—always excepting a period of dangerous eruption—than does the "Valley of Ten Thousand Smokes" every day in the year.

The Mount Katmai Volcano is now proved far exceeding in size Kilauea (Hawaii), the latter having been considered the greatest active crater on earth.

Briefly the dimensions of the crater are: Width of rim, 3 miles; circumference at highest point of rim, 8.4 miles; area, 4.6 square miles. The lake in the bottom is 1.4 miles long, $\frac{1}{10}$ wide; the precipice from the lake surface to highest point of rim 3,700 feet; the cubical capacity is 4,500,000,000 cubic yards.

Greater New York uses 525,000,000 gallons of water daily. This crater filled would equal 1,635 days' supply for the Metropolis.

During the sixty hours of explosive activity in June, 1912, the amount of rock blown off from the mountain was approximately 11,000,000,000 cubic yards which is over forty times the amount of earth and rock removed in the construction of the Panama Canal.

The whole of this National Monument is by no means a devastated wilderness. The upper end of Naknek Lake, which extends within the boundary of the park, lies between Mount LaGorce, 3,000 feet, and Mount Katolinet, 5,800 feet. Lying parallel with Naknek Lake are Grosvenor, 28 miles long, described as "the most beautiful spot in Alaska," Coville

and Brooks lakes. These lakes are among the greatest spawning grounds in the world for red salmon and breeding place of innumerable waterfowl. There are also in the vicinity white fish and giant trout, and bears of unbelievable size. Moose, elk, foxes, grouse, swans, geese, ducks are also here in numbers.

Unga. Again under way towards the setting sun the ship passes Semidi Island and rounding the Shumagin group lands at Unga, population, 313 (1920 census), a village pleasantly situated on the island of the same name and the largest island of the Shumagin group which includes among others Popoff, on which the principal cod-fishing stations are located. Unga is 26 miles in length and about half that width.

The Alaska Peninsula is a most remarkable tongue of land, the inner end of which is marked by the entrance to Cook



"Steve" Foster's Hunting Cabin in Lake Minchumina Region of Alaska

Inlet on the east and the head of Bristol Bay on the west, from which points it extends southwesterly for nearly 500 miles to the strait of Issannakh.

Belkofski on the ocean side of Alaska Peninsula is a pleasant looking hamlet of perhaps seventy-five frame houses, with an impressive background of towering mountains covered to the very summit with a vestment of green. Here is to be found a Greco-Russian church, perhaps the finest church edifice in Alaska. The population, 129 (census 1900), includes about an equal number of Creoles and Aleuts. The former are principally sea-otter hunters; Belkofski being the point from where the largest number of these skins is obtained. The adjacent country furnishes a wide range of excellent grazing land, upon

which there is a natural growth of wild grasses, the luxuriance of which has never been excelled on the richest prairies of Illinois or Iowa. During the run from Unga to Belkofski, about 70 miles, there is a splendid view of Pavloff volcano. Skirting the east coast of Unimak Island on the way to Unalaska there is to be had an occasional glimpse of Mts. Shishaldin and Isanotski, volcanic peaks more or less active, and credited with an elevation of 10,000 feet.

The principal eastern pass to Bering Sea lies between the island of Unimak on the northeast and Ugamok, Tigalda, and Akun on the southeast.

When the voyager shall have arrived at Unalaska he will have some idea of the extent of the Alaskan coast as compared with that of the Atlantic, Lake, Gulf, and Pacific states. The distance in a straight line across the continent from Eastport, Me., to Astoria, Ore., is, in round figures, 2,700 miles. Astoria is in longitude about 123 degrees west and Sitka, 1,000 miles to the northward, is in longitude 135 degrees, while the 193-degree marks the western boundary of Alaska. Sailing west by south it is nearly 1,500 miles to Unalaska, and from thence at least 1 000 miles due west to the boundary line, about 100 miles east of which is the island of Attu, our most westerly land possession. That is to say, traveling in a straight line from the most easterly point of the United States to a directly opposite point in Oregon, the traveler could yet continue on 3,000 miles further and then find himself in United States territory. Traveling to the northward and passing the 600 miles of British coast he would have to cover not less than 4,000 miles before reaching the most northerly point of Alaska. A glance at the map will disclose the fact that Unalaska is very nearly in the same longitude with East Cape, the most easterly point of Asia, beyond which our possessions extend nearly 900 miles.

Unimak is the most easterly of the great Aleutian chain of islands, and is separated from the mainland by the unnavigable strait of Issannakh, with Akun, Ugamok, Tigaldo, Akutan, Avatanak, Unalga, and a number of the smaller islands lying between it and Unalaska.

Unalaska, a village with population, 299 (1920 census), consists of about fifty frame buildings, a few of quite generous size and respectable outward appearance. The inhabitants consist of whites, Creoles, and Aleuts, the last named being in all respects superior to any of the other natives thus far met with—a naturally bright and quick-witted people, with a Japanese cast of features and undoubtedly of Asiatic origin. Both the Aleut and Russian authorities agree that before the Russian

conquest of these islands on the Aleutian Islands there were 120 villages with a population variously estimated at from 15,000 to 25,000.

The island of Unalaska is 125 miles long and 30 to 50 miles wide. There is no timber on the island but this is offset by a wealth of nutritious wild grasses in the valleys and on the mountain slopes sufficient for the sustenance of as large herds of sheep as could be maintained on an average equal to the whole area of the island. The winters are not nearly so severe as those of the cattle-growing states of the northwest, the temperature rarely falling as low as 10° F.

There is an abundance of fish (salmon, cod, halibut, and a species of mackerel predominating) in the bays and rivers of Unalaska Island, but no fur-bearing animals of consequence. Nevertheless, it is the center of the fur trade of the Shumagin Islands on the east to Attu. It is the port of entry for all of western Alaska, and is supplied with wharves and other commercial facilities.

Dutch Harbor is on the eastern side of Unalaska Island in Captains Bay and is so named from the tradition that a Dutch vessel was the first to enter it. It is the coaling station for steamers en route to St. Michael and Nome. The harbor is an arm of the Bering Sea, 600 miles west of Seward, from which latter there is a monthly mail.

Bogoslof is the small island to the westward of Unalaska. History records that on May 7, 1796, a Russian trader was stopping temporarily on the northeast end of Umnak Island, on account of storm, which abated on the next day, during which he observed at a distance smoke arising out of the sea. At night great flames ascended and an earthquake shook the whole island from which the trader was observing the phenomenon, while rocks were thrown across the intervening expanse from what afterwards was found to be the crater of a volcano. On the morning of the third day a newly created island loomed. In 1800 it had ceased to smoke, but fishermen visiting its shore found the solid rock too hot to permit landing. It continued to increase gradually both in height and circumference until 1823, when it had attained a height of 1,000 feet. After that year it gradually diminished and finally disappeared in a single night, another islet of about the same circumference making its appearance about two miles distant. The new Bogoslof is gradually rising and from it there is a constant emission of steam and smoke.

The Pribilof (seal) Islands are St. Paul, St. George, Walrus, and Otter. St. Paul, the most northerly, is about 230 miles

from Unalaska; its greatest length 13 miles and greatest width about 6 miles. At one time about one-half of its 40 miles of coast was occupied by seals.

St. Paul, a village with population, 212 (1920 census), consists of about 100 native frame houses, in addition to which there are about a dozen company buildings. There is a Greco-Russian church, priest's residence, and a finely appointed school house. The resident inhabitants of St. Paul and St. George are Aleuts. What is true concerning the natives of Unalaska will apply equally as well to their brethren on the Seal Islands. They are practically a civilized people, not in



Grass and Timber on Nin Ridge, Kechatna Valley

the sense of being fully educated but that they are converts to the Christian religion and have adopted civilized ways in the matter of dress and mode of living.

The seals begin to arrive at the islands about May 1st, a few bulls constituting the advance. These do not land at once but swim idly about for some days as if inspecting the land, or possibly waiting for the arrival of others. From the date of the arrival, if the weather be clear, until June 1st the number is not materially increased; but if the summer fogs set in earlier, then the bulls begin to come by the thousands and lose no time in selecting and locating upon suitable ground which they

guard and hold against all new comers until the cows arrive—from two to three weeks later. Those that come first locate immediately on the water line of the breeding ground, and between themselves and the newcomers there is a constant fight for possession; those that come latest, being the freshest and strongest, generally driving those that preceded them farther back. This continues until the cows arrive; every bull having in the meantime been obliged to fight a dozen or more battles in order to maintain the ground he has chosen; the weaker ones having been driven from place to place until all have been located. These seal pre-emptions may be said to cover a space about eight feet square, and the pre-emptor, unless driven off by a covetous bull stronger than himself, never leaves his claim for a single instant until the end of the rutting season which continues from July 1st to August 15th. From the time he hauls out in May, and certainly not later than June 1st, he fasts continuously until the breaking up of his harem in August. Weighing 400 to 600 pounds when he comes out of the water, he goes back into it a mere skeleton, and very seldom returns to land during the same season. The cows begin to come in numbers about June 20th and before the middle of July the harems are filled, each bull taking to himself all the way from ten to forty cows. The female seals give birth to their young soon after their arrival, bearing each a single pup. By the middle of September the rookeries are entirely broken up, the young seals have learned to swim, and by the end of November they have, as a rule, all departed from the island. Whence they come and where they go is a mooted question.

The killing of female seals is prohibited by law, and of males those of from two to four years are considered the most desirable—the three- and four-year-old ones having the thickest and finest fur. The males who take and hold possession of the rookeries are never less than six years of age, the younger ones being wholly excluded from the breeding grounds. As a consequence, the young male seals are compelled to haul out in places wholly separate and apart, sometimes miles away from the rookeries. These are the ones doomed to slaughter; those on the breeding grounds are never disturbed. During May and June herds of young “bachelor” seals haul up on land, not very far from the water’s edge, when a number of natives quickly and quietly run along between the surf, and the sleeping seals who, being startled and seeing their retreat to the water cut off, scramble farther back. The Aleuts then walk leisurely on the flanks and in the rear of the drove and drive it, possibly a

mile, to the killing grounds. If the weather is cool they can be driven at the rate of a half mile per hour—only three or four



Historic Block House, Sitka, Alaska

men being required to control the movements of as many thousands. These drives are usually made in the early morning, and if the drive is a long one, the seals are permitted to halt

and rest. Heating them injures the fur. The killing grounds are near the salting houses for convenience in handling and shipping. When on a drive the seals raise their bellies entirely from the ground upon their flippers, and they can get over the ground with a speed almost equal to that of a greyhound.

They are never hurried, however, for if driven too fast they crowd and bite each other and injure their skins. After reaching the killing ground, they are allowed time to cool off. All seals which are undesirable are singled out and allowed to escape. The desirables are killed by men, each armed with a "big stick" of hickory who drive out from 50 to 150 seals and form what they call a "pool." Circling around this pool they narrow it down to a huddle until the seals are within reach of their clubs. Every desirable seal receives a blow which stuns if it does not kill outright. The undesirable are urged to go away. The insensible victims are quickly drawn out, placed on their backs so that they do not touch each other, and killed—all very quickly done, not only to prevent a "heating," which causes the hair and fur to peel off, but to insure the men against being bitten by seals who have been only half killed. Promptly following the killing and bleeding comes the skinning which the Aleuts do with a celerity that is marvelous. The native who is unable to flay a seal in less than three minutes is classed third or fourth in division of the earnings.

The skins are taken to the salting house, which is partitioned into large bins called "kenches," into which they are put, fur side down with a layer of salt between, and where they become sufficiently cured in a week's time. They are then taken from the kenches and piled up into what are called "books," with the addition of more salt, and then finally prepared for shipment by rolling them into compact bundles each containing two skins. At the close of the season they are shipped to St. Louis where they are dressed, plucked, and dyed.

The Nushagak is one of the great rivers of Alaska. It has its source in the lake of the same name and empties into Nushagak Bay. Nushagak, the settlement, is on this river about 100 miles from its mouth, which latter is 20 miles in width. The population, 16 (1920 census), consists of a trader's store, church and parsonage, a few fairly neat buildings occupied by Creoles, and a number of subterranean houses similar to the barbararas already described herein.

The Kashima. In every Eskimo village there is a common or public house, known as "Kashima," built after the style of the subterranean dwellings, but larger. Entrance is down a hole about six feet, then through a low tunnel, crawling ten

feet, then ascending to a level with the roof of the tunnel into a room say 20 feet square. A raised platform extends all the way round the sides leaving room in the center for an open fire which is built on a bare square spot of earth some three feet below the surrounding platform. The platform is on a level with the top of the entrance tunnel, the end of which can be opened at will to permit persons to pass under the platform. When the fire is not needed it is covered over with planks even with the platform.

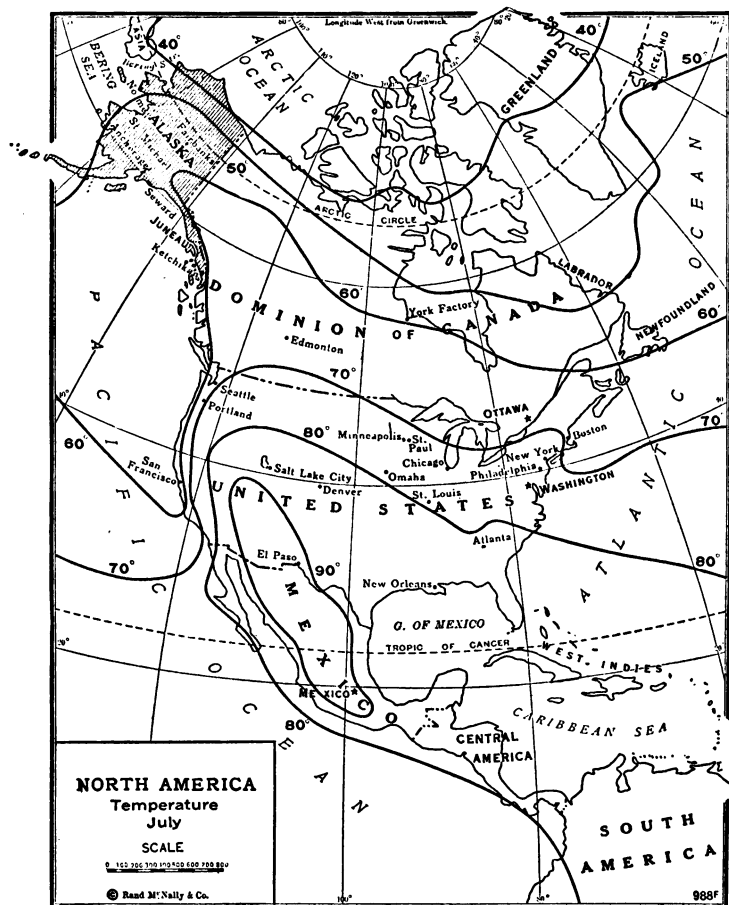
In this house the men do all their domestic work, such as the construction of bidarkas, sleds, etc. Here are held all public meetings; here all public business is transacted. It is also open at all times as shelter for guests or visitors who are there entertained instead of being taken to private habitations. It is the sleeping place for unmarried adult males, and is likewise used as a bath house, for theatrical performances, mask dances, etc. In the matter of scenic representations these natives are on a par with the Chinese. There are combats; stuffed animals are moved about by hidden strings, devils with masks with movable eyes are introduced, and wooden birds with flapping wings. The actors enter through the fire-hole.

The store houses, of which there are about as many as there are dwellings, are on posts ten feet high to protect the contents in each village from the dogs, who devour anything they can get hold of. These storage boxes are about 8 feet square and the only entrance thereto is by a small square hole on one side which is reached by means of a notched stick set on end which is used as a ladder. In these safe deposit boxes are kept their arrows, spears, snowshoes, meat, berries, fish, beluga, blubber, oil, etc.

There is no recognized form of chieftainship or form of government among these people; nor can they be called a tribe as commonly accepted. This is true of all the so-called tribes of Alaska; none has distinct organization. In each settlement some one man, by reason of his wealth or superior skill and bravery, is recognized as a sort of leader, and as such his advice and counsel are more or less respected. But there is no "chief" invested with any authority by his people. The medicine men (shamans), who pretend to cure by incantations, exercise more influence than self-constituted chiefs. They direct all the festivals, dances, etc., in which old and young participate almost continuously during the winter months, and by their sorcerous pretensions acquire an influence equal to absolute power of life and death to be exercised at will against those who

incur their displeasure. No such power is recognized in a chief. A judgment that a life shall be taken is not pronounced by a chief but by the popular voice, and every male adult becomes a self-appointed executioner.

The region about the Nushagak River has the appearance of a high rolling prairie covered with rich verdure. A more luxuriant vegetation or a greater variety of wild flowers than is to be seen growing along the banks, wild timothy, red top and blue point grasses waist high, as far back as the eye can reach, is seldom found anywhere. No western prairie before culti-



vation ever presented a more inviting aspect than does this wild stretch of treeless country with its almost boundless billows of waving grass, thickly interspersed with wild flowers of almost every hue and variety.

There are salmon canneries on this river which employ during the fishing season about 150 white men and 300 Chinese. The fish taken in this river are the "king," some of which weigh over 100 pounds. The smaller rivers and lakes in this section teem with food fishes of various kinds—white fish, similar to the Lake Superior, and trout similar in size and appearance and fully as fine flavored as those of Northern Michigan and Wisconsin. What is true here applies with equal force to all that part of the mainland bordering on the coast and the islands lying in front of it from the southern boundary to Kotzebue Sound. A few miles above Nushagak is a Moravian school called "Carmel," and on the river beyond and also scattered along the sea coast are a number of villages of Eskimos seldom visited by white men.

The Kuskokwim is another great river of Alaska. Its waters are received from the glaciers on the north stretches of the Alaska range and reach the Bering Sea through Kuskokwim Bay. It is 9 miles wide at its mouth and is navigable for over 600 miles inland.

The valley of the Kuskokwim has an area of about 50,000 square miles, and the snowcapped mountains which frame it are known to contain rich gold deposits. The most important metal of the region, however, is cinnibar (the principal ore from which mercury is extracted), of which there are great deposits in the vicinity of Bethel, the principal center of that part of Alaska, and the most immediately tangible asset of the region is salmon which every spring run up the river in great schools to spawn.

The natives own the reindeer herds which range over the tundra, and live upon the flesh of the animals and upon fish.

Bethel is a settlement located about 100 miles up the river, consisting of 50 whites and 275 natives. It is at the head of ocean navigation and it is also the transfer point for all merchandise for up river. Truck gardens nearby produce all kinds of vegetables.

White inhabitants of the region drained by the Kuskokwim are probably less than 300 during the greater part of the year. The native population consists of about 1,000 Behring Sea Eskimos.

Georgetown is another small white settlement on the river, about 250 miles from its mouth.

Tokotna is at the head of navigation.

McGrath. This place, located near Tokotna, has population, 90 (1920 census), and is one of the stations of the U. S. Government radio system of Alaska.

Nome, in the Seward Peninsula, is the trade center of Northwestern Alaska and is the center of a rich placer and gold mining district. It is reached by steamship during the open season of about five months, the distance from Seattle being 2,372 miles. During the winter months the mails are carried by dog teams from Seward and letters from the States take about six weeks for delivery. Population, 852 (1920 census).

St. Michael (called by the Russians Redoubt St. Michael), is on the inner side of the island of the same name, lying near the southeast shore of Norton Sound. Population, 371 (1920 census). It is the ocean terminus of the Yukon River steamers. The island, which embraces about 12 square miles, is in 60° 30" north latitude, and the surface is carpeted with a most luxuriant growth of wild grasses and variegated flowers. The natives are Eskimos—always busy carving ivory, making baskets, etc. The soil, a rich mold, is capable of producing all the vegetables that can be grown in the extreme northern states. The temperature ranges from about—45° F. in winter to 85° F. in summer—about the same as Northern Minnesota. Unalakleet River empties into Norton Sound, about fifty miles northeast of St. Michael. Here is a Swedish mission and an Eskimo settlement. Unalakleet population, 285 (1920 census).

Port Clarence, within a short distance south of Cape Prince of Wales, is a coaling station from which government vessels and steam whalers are supplied, and here is located the principal reindeer station established by the Government, with a view of providing for the necessities of the native people.

Cape Prince of Wales, projecting from the mainland at the southern end of Bering Strait, is the most westerly point of the continent. Population, 136 (1920 census). The men and women are better looking than the general run of Alaskan natives. The women wear long hair, but the men shave the upper two-thirds, leaving a bare crown surrounded by just a fringe of hair.

Cape Prince of Wales is in latitude 65° 30" and longitude 165° 50" and lies nearly opposite the most easterly point of Asia. The small area of land lying at the foot of a slope of hills, as well as the higher level, is covered with verdure, and, surprising to say, a dozen different varieties of wild flowers of as many hues embellish the landscape. Here the natives

possess graphite ornaments, which mineral, they say, can be found in great abundance within three miles of the settlement. A few hours steaming, passing Fairway Rock, and the vessel reaches what the treaty of cession denominates the Frozen Ocean.

"In this region the tundra was of a greenish brown color and rose from a long crescent shaped beach in a very gentle ascent to low cones and bare volcanic peaks, many miles away. This is the tundra that covers much of North America, where the



Lake Spenard, Alaska. Anchorage Bathing Resort

ground remains perpetually frozen to an unknown depth, thawing out only a foot or so on the surface during the summer. Lured on by the strangeness, in a few moments our hands were full of flowers which we kept dropping to gather others more taking, to be in turn discarded as still more novel ones appeared. I found myself very soon treading upon a large pink claytonia, many times larger than our delicate April flower of the same name. Then I came upon a bank by a creek covered with a low nodding purple primrose; then masses of the shooting star attracted me, then several species of pediculatis, then a yellow anemone, and many saxifrages. There were wild bees here too, and bumble bees boomed by, very much as at home. A tundra is always wet in summer as the frost prevents any underground drainage, but is very uniform

and the walking not difficult—moss, bogs, grass, and flowering plants covered it everywhere. The Savanna sparrow and the Alaska longspur were here, and so were golden flowers, the gray-cheeked thrush, Townsend fox sparrow, and Canada tree sparrow.”—John Burroughs.

The Midnight Sun. Crossing the Arctic Circle, latitude $60^{\circ} 32''$, astronomically determined, the course is eastwardly, heading towards Cape Blossom in Kotzebue Sound, in the land of the midnight sun. There is practically no night, only four hours of twilight intervening between the rising and the setting of the sun, the declination of which is only about 2 degrees. One can see to read ordinary newspaper print at midnight without the aid of artificial light.

Capes Espenberg on the south and Kruzenstern on the north are the head lands of Kotzebue Sound and at each there is a small native village.

Eskimo Clothing. A full suit consists of parkay, pantaloons, boots, and sometimes includes a fur cap, but, except during the short season of intolerable summer's heat, the average Inuit goes bareheaded. The parkay is usually double so as to provide fur inside and out. The men wear one pair of pantaloons, with fur inside in summer, but in winter have an undergarment, generally of tanned reindeer skin. The women wear two pairs of pantaloons, one made of tanned reindeer fawn skin and the fur inside, and the other of coarser material with the fur outside. The boots for winter wear are made mostly of the skins of reindeer legs and reach about half way to the knees; those for summer are made of hair-seal skin with tops reaching above the knee. The soles are from the thick hide of the old bull seal.

To protect the eyes against the snow blasts of winter on the one hand, and against snow blindness on the other, they wear goggles with wood where the glass is in ordinary spectacles. In this bowl which covers the eye there is simply a narrow slit through which the wearer enjoys a wide range of vision. Hats are worn only in the extreme hot weather of July and August. The sun hats are carved out of single blocks of wood with broad oval brims in front, and are generally ornamented with strips of ivory set on edge, and upon which is carved the totem of the family of which the wearer is a member. They wear hose made of grasses, closely and neatly braided, and which are preferable to any other in that climate. These interior natives, as well as those on King Island and the coast, generally shear the crown of the head “tonsure” style and sport labrets, some of the latter being of enormous size, though these fashions are confined principally to the males. Among the northern natives



Chickaloon Coal Mine, 75 miles from Anchorage, Alaska

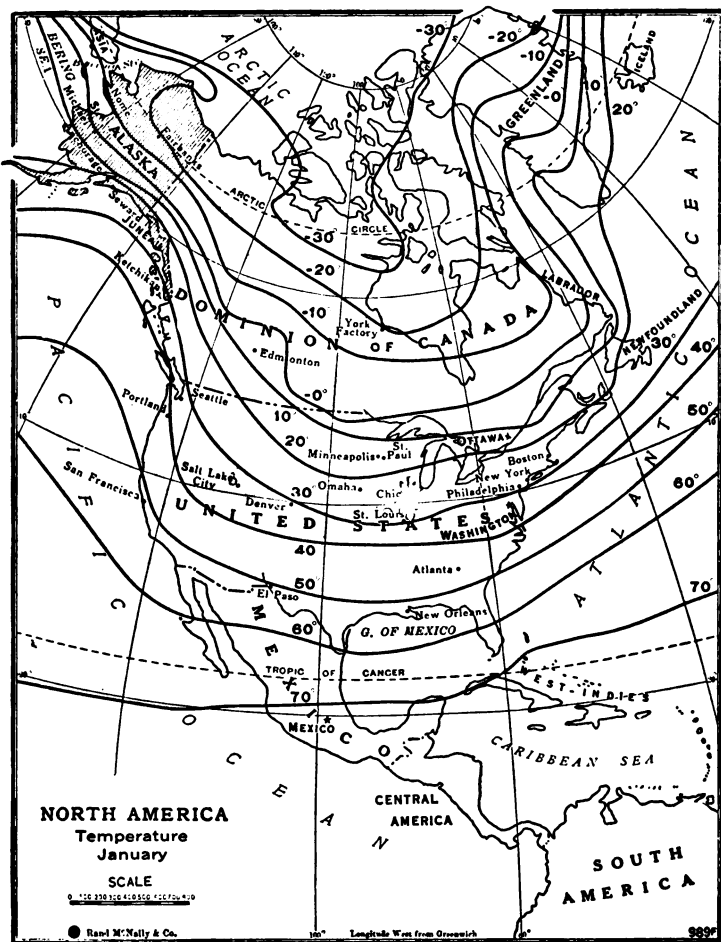
every male of any consequence must have two slits through the lower lip—one at each corner of the mouth in which he wears a pair of labrets about the size of an ordinary cuff button. These are generally made of a kind of mottled stone resembling gray granite, of jade, of ivory, etc., varying in design, round, square, oblong; the largest flange always worn outside. They are worn as personal adornment. The women wear stone and ivory ear trinkets.

At Point Hope, probably the most barren, desolate place imaginable, there is the largest Eskimo settlement on the Arctic Coast. Point Barrow is a low, flat sand pit that projects eight miles from the main coast, on which there are two native villages, Ooglaamie and Noowook.

Point Barrow, population, 322 (1920 census), is the summer rendezvous of the Arctic whaling fleet. The Eskimo whaling season opens as soon as the ice begins to break away from the shore in the spring or early summer. During the fall and winter they hunt walrus and hair-seal.

Point Barrow, the northernmost cape, is warmer than any point in the world as far north of the equator, and Alaska's southern shores bordering the North Pacific Ocean are likewise warmer than any point in the world in similar latitudes during the winter months as the result of the beneficent influence of the Japan Current.

Norway alone can approach it in these respects, but in Norway the mountain backbone runs parallel to the coast line, its rivers are insignificant streams, and there is no room for extensive valleys; while in Alaska the immense quadrangle is divided into three zones by lofty mountains on more or less east and west lines which leave between them broad plains, through which such streams as the Kuskokwim with 600 miles and the Yukon with over 2,000 miles of navigable waters open up its vast interior.



North America—January Temperature

SKAGWAY TO ATLIN, DAWSON, FAIRBANKS AND ST. MICHAEL

Leaving Skagway the train begins at once its climb to the Summit of White Pass midst scenes of the wildest and most awe inspiring grandeur; and, as the train continues its sinuous climb along the mountain sides, one cannot help wondering at the skill of the engineers who were able to build a railroad through such seemingly inaccessible country.

The indescribable ruggedness of the country impresses upon the visitor the tremendous hardships and unparalleled heroism of the hardy pioneers who blazed the trails and opened up the vast country now yielding such delights in scenery and hinting at so much commercial promise.

On the way to the summit the train passes many points of unusual scenic, as well as historic, interest. Looking back down the valley from Rocky Point, a splendid view is had of Skagway and Lynn Canal.

Then come into view the "hanging rocks" at Clifton, under which the train passes. Beyond are the Pitch Fork Falls—a scene of rare beauty. On the other side of the valley are the Bridal Veil Falls.

About thirteen miles from Skagway, down in the valley, may be seen a few log cabins—all that remain of what was once known as White Pass City. During the Klondike rush this ephemeral town contained about 3,000 people, living mostly in tents.

Glacier Gorge is next, which the train follows, but over 1,000 feet above it. As the train climbs Tunnel Mountain a wonderful panorama of scenery is unfolded—the Sawtooth Mountains, Dead Horse Gulch, and deep, deep down the rushing glacier stream with here and there glimpses of the old White Pass trail.

Seventeen miles from Skagway by rail, but only twelve in an air line, is Inspiration Point. A truly inspiring panorama of Alaska's matchless scenery is beheld from here.

Just before the Summit is reached the train crosses the steel cantilever bridge, 215 feet above the rushing mountain stream. Twenty miles from Skagway is the Summit of the White Pass. Here under the stars and stripes and the Union Jack a bronze monument marks the boundary between Alaska and British Columbia. Here are located United States and Canadian Customs Officers.

Lake Bennett. Along the shores of lakes and mountain streams the train continues on its way until the upper end of Lake Bennett is reached, and the now deserted town, also named Bennett. Time was when it teemed with life and excitement,



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Baskets Made by Aleutians, Atka Island, Alaska

when thousands of men were building all manner of water craft to sail down the Yukon to the gold land of their hopes, the Klondike. Here the train stops for luncheon.

Lake Bennett is a long narrow sheet of blue, bounded by mountains of old rose color. As the train approaches Carcross, the traveler crosses the most northerly swing bridge on the American continent, built over the outlet of Lake Bennett into Nares Lake. For twenty-seven miles the railway follows the ever winding shores of this lake. En route the 60° of north latitude is crossed, the boundary between British Columbia and the Yukon Territory.

Carcross, Y. T. is located at the foot of Lake Bennett. Here connection is made with the steamer of the White Pass & Yukon Route for Lake Atlin.

Atlin is located on the shores of Lake Atlin in the extreme northern part of British Columbia. The route to Atlin is through a chain of narrow mountain girt lakes to Taku Landing. Here portage of two miles by rail is made to the west shore of Lake Atlin where another steamer is boarded. A distance of six miles and the town of Atlin on the shore of Lake Atlin is reached. Atlin is the supply point for the placer gold mines located in this district. The discovery of gold near Atlin in 1898 made this district known to miners, but it did not become known to tourists until some years later, and

now the fame of Lake Atlin, one of the most beautiful lakes in the world, has spread far and wide.

The lake is over 80 miles long. At the extreme upper end is the great Llewellyn Glacier—which with its various arms is about 50 by 75 miles in area.

One of the features of the trip to Lake Atlin is the excursion trip to Llewellyn Glacier, about 40 miles from the town of Atlin, through a series of narrow passages walled in by mountains, many of them snow crowned throughout the summer. And when the water is smooth, as it frequently is in these passages, there may be seen the most wonderful and perfect reflections imaginable. A splendid tourist hotel is located on the shores of the lake in the town of Atlin. There are many points of interest in and around Atlin, including the Indian village gold placer mine, fox farms, warm springs, etc.

Whitehorse, Y. T. is a busy little city of 600 people, located on the west bank of Fiftymile River. Near-by there are interesting copper mines. As at Skagway there is excellent hotel accommodation. It is the terminus of the railway division of the White Pass and Yukon Route—the point of departure for the trip down the Yukon River to Dawson.

When, shortly after this railway was finished over the White Pass, Burton Holmes took in this region, he said among other things, "Where the pioneers dragged their bleeding feet up the icy stairways of the White Pass or the Chilkoot, we rolled in all the luxury of railway cars and within sight of the death-dealing rapids, through which their boats were steered, with the fear of death for pilot, we glided smoothly over rails of steel, coming from Skagway on the coast to Whitehorse City, on the Upper Yukon as comfortably and as expeditiously as we could travel from New York to Boston."

The trip by rail from Carcross follows more rivers, and passing little lakes stops at Miles Canyon. About five miles beyond, the trip by rail comes to end at Whitehorse on the Fiftymile River, 111 miles from Skagway. Connection is made here with the steamers of the White Pass & Yukon Route for Dawson.

DOWN THE YUKON

Whitehorse, the northern terminus of the White Pass & Yukon Railroad, is two miles below the famous Whitehorse Rapids, at the head of navigation on the Yukon River. From here the traveler will board a steamer of the type seen on the Mississippi River and will find all the comforts to be had on the best of our boats that ply the rivers of the United States.

From Whitehorse to Dawson is a trip of 461 miles and takes about 48 hours. The scene is ever interesting. The river is tortuous and rapid. There are terraced hills clothed with spruce, aspen, and wild flowers. Then a bit of open country, the meadows gay with more wild flowers. Then the river cuts its way through the spurs of mountains, ramparts, and gorges. Here and there small Indian camps are passed, the women busily engaged in drying salmon. Stops are made occasionally at the telegraph stations along the river, and at the wood camps, where wood is taken on as fuel. Sometimes a bear, a caribou, or a moose may be seen swimming across the river or standing on the bank apparently posing for a picture.

The trip is unusually restful. The air is fresh and invigorating. The boats are modern and very comfortable. The staterooms are commodious and scrupulously clean. Should the weather be unfavorable the tourist may view the scenery from his chair in the spacious observation room.

There are many points of interest on the voyage. The tortuous Thirtymile River, where navigation in this Northland is seen at its best. Cassiar Bar, where gold placer mining was first done in the Yukon country in the early 80's, and up on the mountain side near-by lies buried one of the discoverers. Tantalus Butte, now to the left, now to the right, sometimes ahead and again astern. Five Finger Rapids, Rink Rapids, Fort Selkirk, near the site of the old Hudson's Bay Post, destroyed by the Indians in 1851. Victoria Rock so named on account of resembling the profile of Queen Victoria. The Pelly Ramparts, and other interesting points.



Fifty-six Shovel-nose Pike, Weighing from Ten to Twenty Pounds, Taken by Trolling in Four Hours, Lake Minchumina, Alaska

The route is down the upper section of the Yukon River known as the Lewis River and, as far as Lake LeBarge, often spoken of as the Fiftymile River; a 28-mile trip through a flat country to Lake Le Barge.

Lake LeBarge, Y. T., is a beautiful lake, thirty odd miles in length, and it is over this lake that the early supplies are carried on the ice in the spring from White Horse to the steamers lying in wait at their winter quarters. They in turn distribute down the rivers as soon as the ice goes out, the first fresh goods arriving in the country since the close of navigation. It is here, at the foot of Lake LeBarge and at the head of the swift Thirtymile River, where many wrecks occurred in days gone by, that "The Cremation of Sam McGee" took place in the book "The Spell of the Yukon," which made the author famous.

Hootalinqua, Y. T. Thence the steamer traverses the swift, crooked Thirtymile River to the junction with the Hootalinqua (often called the Teslin River), where there is a small trading post called Hootalinqua. Up this river, which drains Teslin Lake, is a great country for the big game hunter, including moose, caribou, sheep, and bear; fish, grouse, and water fowl.

From Hootalinqua down the river is 27 miles to Cassiar Bar where men worked pay-dirt out in 1886. The traveler in his conversation with the old timers in the country will be told again and again of the famous Cassiar diggings.

At the mouth of the Big Salmon River is the next stop, a post where extensive trading is done with the natives for fur and where the prospectors and those mining on the Big Salmon can get supplies. Gold was first found on this river in 1881 by four miners who had made their way over Chilkoot Pass at the head of Lynn Canal and down the Lewis River.

Still further down is another trading post at the mouth of the Little Salmon, and further on is Carmack. Near here are the coal mines that today are producing coal; also stores and the first barracks of the Royal Northwest Mounted Police since leaving Whitehorse, for it is at this place that the winter trail from Whitehorse to Dawson first touches the Yukon after leaving it a few miles below Whitehorse. This winter trail makes many short cuts to reduce the distance between the two points.

Carmack, Y. T. The village was named after George W. Carmack, a squaw man, found living with the natives at the mouth of Klondike River in 1896. Robert Henderson who had discovered gold on Indian River advised Carmack to cross over the low divide into what afterwards proved to be waters of the Klondike River and prospect for gold. In the event of making a find Carmack was to have sent a native back to



Grown at Fairbanks, Alaska

inform Henderson that he might stake. This was the custom of the country.

Carmack went as advised, struck rich pay on Bonanza Creek a tributary to the Klondike, the first strike made in the Klondike in 1896. He did not notify his benefactor. Henderson kept working on Gold Bottom in ignorance of Carmack's strike until the whole country was staked by men who had stampered there from Fortymile diggings, at which place they discovered Carmack recording his find with the Government.

Five Finger Rapids, Y. T., is the next place of interest. Here many outfits were lost in the early days during the mad rush to the Klondike. On account of the numerous accidents the



Glacier City, Kantishna, Alaska

Canadian Government took early steps to remove these obstructions and also many of the most dangerous rocks farther down.

Thus far, the Yukon scenery is ever varying; first, open flat country with the mountains visible on either side; then closing in until they form the near banks of the river. Now a long stretch of gravel terraces, then high cliffs of varied colored rocks. Further on there are strata of ash of possible volcanic origin, running along the sides of the bare hills. There are growths of spruce and willows—in many places hanging out over the rivers, called “sweepers,” and to the unwary traveler in a small boat who allows himself to be carried in to them very dangerous.

Rink Rapids, Y. T. Five miles below Five Fingers the stream flows through Rink Rapids. To the writer who has traveled it, the Yukon seems one continual rapids from Five Fingers until Rink Rapids have been passed. Here the river is white from passing swiftly over the boulders below.

The steamer soon passes Yukon Crossing, at which place the winter trail from Whitehorse to Dawson crosses the Yukon.

Old Fort Selkirk, Y. T., the next stop, is identified with the history of this country. It was here that Mr. Robert Campbell located this trading post in June, 1848, having come into the country over the Rocky Mountains from the Mackenzie waters.

During the early rush to the Klondike the Canadian Northwest Mounted Police had a force here. Their duty was to keep track of the movements of each and every one that entered the Yukon Territory, looking after them in every way, and they did it.

The Pelly River, which joins its waters with those of the Yukon on the right “limit” of the river, opposite Fort Selkirk, finds its source in the Rocky Mountains, commonly spoken of here as the “Mackenzie Mountains.” By traveling in boat up this river one can reach one of the finest big game countries in the North, either by staying with the Pelly River itself, or by going up its left fork, the Macmillan. Here is an ideal country for hunting the moose, caribou, sheep, and bear; also good fishing and grouse and water fowl.

After leaving Fort Selkirk the next stream is the White River with its source in the St. Elias Mountains. At its head, which is swift and dangerous to navigation, have been many strikes, both in copper and gold, and several stampedes have been made there at different times during the past.

Many big game hunters go every year into this country from Whitehorse, or from McCarthy, on the Copper River Railroad



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Entrance to Wrangell Narrows

in Alaska. Here are to be found all of the big game animals common to the North and in such numbers that the huntsman is sure to have his bag full of the trophies he has selected from the many before killing. Willing guides with full equipments may be had at either of the points mentioned above, but arrangements should be made a considerable time in advance.

The traveler must not feel surprised when he sees or is told of the different farms existing along the Yukon and its tributaries.

Here are 6,000 square miles of farm land waiting for a market which will come as the country is settled up and its vast mineral resources developed.

The next river is the Stewart. It was discovered by and named after James G. Stewart in 1849 while hunting for natives who were out trapping and hunting. The Stewart and its left fork, the McQuestion, have been and are still great producers of gold.

Active mining began on the Stewart River in 1885, and the run averaged about \$100 per man per day in summer.

Ogilvie, Y. T. The next place of interest is Ogilvie, one of the first posts established. It was here that prospectors bought supplies which they used in developing this great gold country. Opposite Ogilvie the Sixtymile River joins the Yukon, its source being near the head of the Fortymile River. The Sixtymile River located as it is in the heart of this great gold belt has been a good steady producer.

Next we have the Indian River which enters the Yukon on the right limit next above the Klondike River. Up the Indian River are some of the richest creeks ever found in the Klondike district and these helped greatly in the production of \$100,000,-000 that was taken out from this district between 1898 and 1905.

Dawson, Y. T. Arriving at Dawson the visitor will find a city that in the rush of '97 and '98 sprang up, as it were, over night with people from all parts of the world brought there by the news of the rich strike.

Located at the junction of the Klondike and Yukon rivers, it is the metropolis of the Klondike, and the educational and financial center of Yukon Territory. Population, 2,000. Mining is the chief attraction to all visitors, in view of which the Yukon Development League has permission from the large operators for visitors to be shown the mining operations in every detail. The mammoth dredges dig and pass through their machinery 10,000 to 20,000 cubic yards of gravel per day, and the giant water nozzles on the hydraulic operations sluicing down banks of gravel 200 and 300 feet high at 3,000 cubic yards per nozzle per day, which passes at terrific speed through the sluice boxes, separating the gold from the gravel during the process.

Good roads facilitate speedy trips to all the famous gold-bearing creeks, along which the dredges and nozzles may be comfortably viewed from the car.

The agricultural possibilities of the territory are not inconsiderable. The grain crop is increasing, almost every known vegetable is grown successfully, and the fur catch is increasing; 15,000 acres are now held under the Homestead Regulations and 30,000 acres have been purchased outright. The Mayo District is said to have 4,800 square miles of silver-lead deposits.

Considerable development work has been done in this district and some very rich silver-lead ore uncovered. Several thousand tons of this ore were shipped to the smelter at Tacoma during 1921. The indications are the Mayo Camp will be not only a rich silver-lead camp but an extensive one as well.

Here are all the government buildings and the different departments of the Yukon territory; fine schools, churches, a Carnegie library; homes built with all the comforts of modern homes in the States, and as the traveler strolls about the city, he will be shown the cabin which is surrounded with flowers and kept up in memory of Service, the great writer of the Yukon, who made this his home in the early days. One can auto into the gold-bearing creeks where there is every modern device used by large corporations; in working over

the old diggings everything being worked out scientifically to get all the gold that was left by the miners in the early days who, on account of the wasteful methods and the great expense of operations, could only work out the rich pay dirt.

The American Express Company operates over the White Pass & Yukon Route and carries on a general express business, issues money orders, makes collections, carries gold dust, bullion, coin, currency, valuable papers, etc.

The commercial telegraph service is maintained by the White Pass & Yukon Route between Skagway and Whitehorse. In addition the United States and Canadian governments maintain a commercial telegraph service reaching most of the coast and interior points, especially those along the lines of the White Pass & Yukon Route and the American Yukon Navigation Company.

Fortymile, Y. T. The next stop below Dawson is at the junction of the Fortymile and the Yukon rivers. At this point is located the barracks of the Royal Northwest Mounted Police and the Canadian Customs. This, in days gone by, was the chief post of the North American Transportation & Trading Company, called Fort Cudahy after its owner, a company organized for trading purposes and transportation, having posts the length of the Yukon River to St. Michael, where they received their freight from ocean liners and distributed it with their own steamers to their posts.

The Fortymile country, located up the river by the same name, has been a steady producer ever since it was struck in 1885-86. The river itself was a hard one to navigate (on account of the swift waters and canyons) for the men who had



Indians at Lake Minchumina, Alaska



Top—Where Land and Water Transportation Meet at Anchorage, Alaska

Bottom—Chiznik, Alaska Peninsula

to get their supplies up it in polling boats. In these same canyons every year men work the bars after the high water and each year it would seem a fresh supply of gold is taken down on the high waters. Many men have been working these bars, making a good living and laying aside a little for the future, ever since the camp was struck. In this section are creeks tributary to the Fortymile that have been good producers.

Eagle. Passing down this most beautiful stretch of the Yukon we cross the Alaska-Canadian boundary line 12 miles above Eagle. At Eagle, population, 98 (1920 census), we find the American Customs and see the old abandoned Fort of Egbert where for years United States soldiers were kept to guard our customs. This post was abandoned in 1911. Here we also find stores that supply the miners of the Seventymile River and other numerous streams in this section of Alaska.

Caribou Run. Every September large bands of Caribou cross this section of the Yukon, on what is known as the great "Caribou Run." For about two weeks they cross continuously, hundreds of thousands of them. Steamers have had to tie up for hours at times when there was an extra large band crossing. No one seems able to explain this run, where they all come from or where they all go. They often pass through the towns and on account of their numbers seem to be insensible to fear.

Circle, population, 98 (1920 census), maintains the stores of the Northern Commercial Company. It is on the trail to Fairbanks used by the United States mail in winter, and to supply the mining industry in the country lying between Circle and the rich diggings of the Fairbanks country on the Tanana River. Along the trail are roadhouses for the accommodation of the traveler. About 40 miles back, near Medicine Lake, is the Circle Hot Springs with fair accommodations. In this vast country good hunting is to be had for moose, caribou, bear and sheep. Also grouse and water fowl.

Fort Yukon is the next stop; population, 319 (1920 census). Here the midnight sun can be observed in June. Here also are the large Episcopalian Indian Mission and Indian school, and, as at Eagle and Circle, a United States Government wireless station. To this place come the trappers and fur traders from the Porcupine country and the Chandelar country, in fact from all points of the compass to sell and ship their furs. Fort Yukon was first started in 1847 by Mr. A. H. Murry and it was here that Mr. J. Bell in 1846 reached the mouth of the Porcupine River and was told by the natives that the large river he was about to enter was the Yukon. Here the Yukon opens out for miles in a great flat known



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Indian River near Sitka, Alaska

as "the Yukon Flats." The river is some 60 miles wide, filled with large gravel bars and islands and is known as one of the greatest breeding grounds in the world for water fowl.

Up the Chandelar River, which runs into the Yukon a few miles below Fort Yukon, there are some placer diggings. This river drains from the Arctic Slope. Until the winter of 1906-07 the only communication that the miners in the Koyukuk country had, after the freeze-up in the fall until the break-up in the spring was the United States mail packed in from Fort Yukon up the Chandelar River and over the divide to Coldfoot once a month. This often consisted of what one man packed on his back and himself on snowshoes. The mail accumulating all winter at Fort Yukon would be picked up by first steamer in the spring and then taken down the Yukon to the mouth of the Koyukuk River and up on the steamer making trips on that river in the summer. Today the mail goes into that country, once a month from October until May, from Tanana.

There is a trail with cabins, constructed from Beaver City in the Yukon Flats to Cairo, a trading post on the Chandelar River, where miners get their supplies. Over this trail in winter many miners who purchase their supplies at Beaver City sled them to the grounds they are working or prospecting. This trail was cut and the cabins built by the miners. The contents were put there by the miners, and stoves and such equipment necessary for the traveler are in each. All travelers are welcome

to use the same; but a warning to all: Always leave fuel and shavings when you depart, as this is the custom of the country; for by so doing you may save the lives or forfeit the lives of others that may have struck a storm or had an accident.

Rampart. After leaving Beaver City and the Yukon Flats, and then one of the most beautiful stretches of the Yukon, we come to Rampart, population, 121 (1920 census), the old home of Rex Beach, and the distributing point for the various creeks which for years have produced gold. The U. S. Government has an experimental farm at this place. From Rampart there is a road that leads through the creeks of this camp over to the Hot Springs diggings on the Tanana.

Continuing down the river through Rampart Rapids the next stop is at Tanana and Fort Gibbon adjacent to the mouth of the Tanana River, the largest tributary of the Yukon.

At the junction of the rivers on the right limit of the Yukon lies the Mission of St. James, Episcopalian. Chiefs in charge of the near-by tribes make this a general meeting place for the natives who are more distant and only come in for supplies about Christmas time.

Tanana, population, 213 (1920 census), is a transfer point for passengers and freight from St. Michael, Fairbanks, Dawson, and Whitehorse. Several hotels and stores are located here. The United States Government has a wireless station, also land line station, at the post, which consists of one and sometimes two companies of soldiers. The Knights of Columbus have one of their buildings here, where the soldiers are entertained gratis and where many of the long winter evenings are spent enjoying moving pictures and the like.

From here the winter mail trail leads to the Koyukuk country. Also up the Tanana to Hot Springs and Fairbanks and so on out to the coast by way of Chitina and the Copper River Railroad to Cordova. The winter trail which leads down the river to Kaltag and over the Kaltag portage to St. Michael and Nome starts from here.

Hot Springs, population, 29 (1920 census). Proceeding up the Tanana River en route to Fairbanks, the head of navigation on that river, the first place of interest is Hot Springs, a distributing point for the placer mines in this section. Great trading is done here by the natives in fur of as high a grade as any in the North. There is a fine farm of silver and black foxes. The starters were caught in this locality and many have been transferred to Prince Edward Island in Canada (where they took first prizes) and in the United States.

Baker Hot Springs. Here also is the Baker Hot Springs—a quiet, restful place where one will enjoy the surroundings and will be well cared for. Some of the finest farms in the North are in this vicinity.

Leaving Hot Springs we soon pass the mouth of the Kantishna River which drains the northern slope of Mt. McKinley of which latter there are glimpses from the deck of the steamer. At the head of this stream is the Kantishna mining district where gold was found in 1905 and which has been a steady producer ever since.



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Pomarine Jaeger

Painting by Fuertes

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Tolovana River drains the Tolovana gold district where several millions have been taken out in recent years. Supplies are here transferred from boats coming up the river and are pushed up the Tolovana in gas boats and scows. A mail boat runs weekly from Fairbanks (in summer) to the Tolovana. In winter the mail is handled over the new government railroad to Dunbars, thence by stage to Livengood, the town in the camp.

Nenana is next, population, 634 (1920 census). The government railroad first touches navigable water here, after coming from the open port of Seward, 414 miles south, and having passed over the Alaska Range, the highest on the continent. Here are the Alaska engineering buildings, the headquarters of the organization that has been doing the construction from the north (the railroad having been built from both ends). Nenana itself is a town administered by the Government. At this point passengers, express, and mail are transferred to the Government Railroad at North Nenana and are taken to Fairbanks, 56 miles over that section of completed road.

Fairbanks, population, 1,155 (1920 census), the head of navigation for the steamers plying to Whitehorse and St. Michael, is a town that in many respects resembles many of the prosperous towns in the United States. Here are located the district court and all the administrative offices of the fourth division of Alaska, an up-to-date school, a public library, hospital, and churches; the First National Bank (a Federal reserve bank), and attractive shops; a first-class daily paper, publishing the news from all parts of the world, received hourly over the United States Telegraph and the Radio. Fairbanks was first started in 1901 by a trader who was left there by a steamboat that had contracted to place him up the Tanana River as far as possible. The captain by mistake took what appeared to be the main river, 10 miles below Fairbanks, and came up the slough that Fairbanks is now located on. Believing he could go no further, and the season being late, he put the trader off here against his will, at the identical spot where the Northern Commercial Company, large power plant and stores are located. The following year a prospector by the name of Pedro drifted over from the Circle diggings on the Yukon and found gold on the creek that now bears his name. Thus Fairbanks was located where it now stands. The first strike of gold placed Fairbanks and the surrounding country first in the production of gold in Alaska, as it since has produced about one-fourth of all the gold mined in Alaska. Fairbanks is located in a heavily mineralized country and a



One of the Outdoor Pastimes of Alaska Boys

avored section of the Tanana Valley where climatical conditions regarding agriculture are the best.

The United States Government's extensive experimental farm here has met with the greatest success. There are many fine farms which produce abundant crops of all the hardier grains and a flour mill to grind them. All kinds of vegetables do well. With the completion of the railroad this will be a prosperous farming country.

There is an assay office in Fairbanks where the prospector can have assays of the different kinds of minerals he may find. The Government has also built a splendid mining and agriculture college; indeed this town and surroundings have much to offer to those who will stay by it and take advantage of what the district offers.

Trips may be taken by motor car to the gold bearing creeks in the vicinity, where the placer mining is being done. The electric plant which lights the city also serves the adjacent mining camps. Fairbanks may be reached all the year from Cordova by Copper River & Northwestern R. R. to Chitina, thence to Fairbanks:—also from Seward by U. S. Government R. R. through Nenana, and during four months in summer, steamboat service eastward from St. Michael, westward from Dawson and Whitehorse Yukon Territory is maintained. The first through boats down from Whitehorse usually arrive about the middle of June and the first up the river from St. Michael about July 4th. The last steamer leaves Fairbanks from either port about October 1st.

Leaving Tanana, we sail one hundred and thirty miles down the river to Ruby, where gold was struck in 1911, on the

tributaries of the Nowitna River. Here a winter mail trail leaves the winter mail trail to Nome for Opher and Iditarod. At Opher this trail connects with the winter trail to McGrath and to Wasilla on the Government Railroad, having passed through the Alaska Range and Rainy Pass.

We soon pass the mouth of the Koyukuk River. Steamers of light draft take supplies to the far distant placer camp which is in the Arctic Circle. This has been known as the Koyukuk country and has been a good producer. In fact, it has always been a self-sustaining camp, no money from the outside being needed in its development, taking at all times enough gold dust out to run itself. Very little if any outside money or "Chechacko Money" as silver, gold or paper is called, being used in the camp. Gold dust is the common medium of exchange.

Ruby, population, 128 (1920 census), is located on the south bank of the Yukon River opposite the Melozi River. It is the distributing center for the Ruby mining district, situated about 20 miles to the south, with which it is connected by a wagon road.

Nulato, population, 258 (1920 census), a few miles below, contains stores and a mission. For several miles down the river coal can be observed along the banks and there is no doubt that in the future this section of country will be a good producer of coal.

Kaltag. Forty-eight miles below Nulato we pass Kaltag where the winter mail trail makes a cut off en route to Nome going over the Kaltag Portage and saving hundreds of miles.

Anvik. The next place we pass is Anvik, population, 140 (1920 census), at the mouth of the Anvik River, where there is a store and a small mission.

Holy Cross, located at the mouth of the Innoko River, maintains the largest and best mission in the north, and from this place shallow draft steamers take supplies and passengers up the Innoko River to Opher and the Iditarod camps.

Iditarod, population, 50 (1920 census), is located on the Iditarod River, a branch of the Innoko, about 300 miles above the junction of the latter stream with the Yukon. During high water river steamers can reach the city, but at other seasons freight is brought in by smaller boats and gasoline launches. It is a distributing point for the Iditarod placer region.

Flat, population, 158 (1920 census), the center of placer operations of the Iditarod region, is situated about seven miles from Iditarod, and is connected with the latter place by wagon

road and a wooden rail tramway, over which freight is transported.

Russian Mission, which is the next stop, contains a church and school of the Russian faith, also a store.

Marshall, a short distance farther down the river, struck in 1911, has produced a little gold and has a fair outlook for the future.

Andreafsky, at the mouth of the Andreafsky River is a great trading place for the Eskimos. It was used as a "boneyard" for the many river steamers of the early days, and the traveler will see abandoned ships and machinery of all kinds.

As the steamer passes out of the Yukon's northern mouth, we pass a radio station called Kotlik. In this Yukon delta are large fishing concerns that put up salmon every year as the fish come in to climb the rivers to spawn.

The Yukon, draining as it does a country which contains so many small glaciers at the head of the rivers that feed it, is continually washing down and casting out into the Bering Sea the silts and gravels from the uplands, making it shallow for miles out from the mouth. Across this shallow water the river steamer goes to St. Michael where connections are made with the ocean boats plying from the states.

The Island of St. Michael is a military reservation, the companies operating stores and having docks are there by special permission of the Government. Here the traveler will see the little block house or fort of the Russians who located in 1830. He will also see the little brass cannon that was left there by them.

TRANSPORTATION

Personal comfort requirements on ships to Alaska compare favorably with the best coast line steamers elsewhere.

Those who contemplate a summer tour should make note of the following:

To see the sun shining at midnight, the departure from Vancouver or Seattle should be made about June 15th.

Do not burden yourself with heavy clothing. By way of comparison it might be noted that the summer temperature of Skagway, Atlin, Dawson, and Fairbanks runs on an average from about 60 to 75 degrees, while that of cities like Chicago, New York, and St. Louis runs from 70 to 95 degrees.

It is well to be provided with a medium weight overcoat or wrap, walking shoes or rubbers for any intended tramps ashore, and medium weight underwear, such as usually worn in the late spring. Cold weather in Alaska or Yukon is never encountered during the summer. You merely escape the



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Chief's House, Deserted Indian Village, Cape Fox, Alaska

sultry heat of more southern points. The average rainfall at Dawson for the months of June, July, August, and September, covering a period of 14 years, is less than $1\frac{1}{2}$ inches per month. This is about half or less than the rainfall during the same months in Chicago, New York, Boston, etc. The rainfall at Fairbanks and Atlin is approximately the same as at Dawson.

By all means take a camera with you. There are many interesting things worth "snapping" besides the scenery, and with a little care in exposure and focusing the result will be a most interesting pictorial record of your trip.

All transportation to and from Alaska is by water.

Steamships between Seattle, Wash., and all southeastern and southwestern Alaska points, and between Vancouver, Victoria, and Prince Rupert and Southeastern Alaska points are operated at all times of the year. North of the Alaska Peninsula and on the rivers of interior Alaska navigation is closed in winter.

The following steamship companies operate between Seattle, Wash., and Alaska ports:

Alaska Steamship Co. to Ketchikan, Wrangell, Petersburg, Thane, Treadwell, Douglas, Juneau, Haines, Skagway, Cordova, Valdez, Seward, Anchorage, St. Michael, Nome. This company also operates steamers from Seward to the following ports on the Alaska Peninsula: Port Graham, Seldovia, Homer, Kodink, Uyak, Karluk, Cold Bay, Chignik, Unga, Sand Point, Coal Harbor, Belkofsky, Scotch Cap, Cape Sarichef, Dutch Harbor, Unalaska, and Nushagak.

Border Line Transportation Co. to Ketchikan, Wrangell, Petersburg, Treadwell, Douglas, Juneau, Thane, Hoonah, Sitka, and ports on the west coast of Prince of Wales Island.

Pacific Steamship Co. to Ketchikan, Wrangell, Petersburg, Thane, Treadwell, Douglas, Juneau, Haines, Skagway, Yakutat, Katalla, Cordova, Valdez, Seward, Seldovia, Port Graham, Anchorage, and Kodiak and during tourist seasons to Sitka.

The Canadian Pacific Ry. (British Columbia Coast Service) operates two steamers between Vancouver and Skagway to Alert Bay, B. C., Prince Rupert, B. C., Ketchikan, Wrangell, Juneau and Skagway. During the tourist season from about June 10th to the end of August these steamers, Princess Alice and Princess Louise, call at Taku Glacier en route to Skagway. At Prince Rupert connection is made with the trains of the Grand Trunk Pacific R. R.

Ships touching at Skagway connect at that port with the White Pass & Yukon Route, by rail to White Pass, B. C., 20 miles; Log Cabin, B. C., 32 miles; Bennett, B. C., 41 miles; Carcross, Y. T., 67 miles; Whitehorse, Y. T., 110 miles.

Connection is made at McRae, Y. T., with branch line trains for Carr Glyn, Y. T., 5 miles, and Pueblo, Y. T., 11 miles.

The White Pass & Yukon Route during the season of navigation operates a fleet of river steamers carrying freight and passengers between Carcross, Y. T., and Atlin, B. C., and between Whitehorse and Dawson, Y. T., 460 miles.

Parlor observation cars are run on all regular trains, and during the summer season observation cars are added.

The American-Yukon Navigation Co. operates steamers on the Yukon River, on an irregular schedule, between Dawson and St. Michael. Service begins about June 5th and ends about October 1st.

Ships calling at Cordova connect there with the Copper River & Northwestern Ry. for Eyak, 8 miles, Miles Glacier, 49 miles, Chitina, 131 miles, Strelna, 146 miles, Shushana Junction, 191 miles, and Kennecott, 197 miles.

Ships making Seward or Anchorage connect with the U. S. Government Alaska R. R. for Fairbanks, 508 miles. Stations en route are Roosevelt, 23 miles, Hunter, 40 miles, Kern, 71 miles, Anchorage, 114 miles, Matanuska, 151 miles, Houston, 175 miles, Talkeetna, 227 miles, Deadhorse, 249 miles, Gold Creek, 264 miles, Chulitna, 275 miles. Branch from Matanuska to Eska, 21 miles, and Chickaloon, 38 miles.

Steamers touching at Nome and St. Michael connect with the American-Yukon Navigation Company steamboats, operating from St. Michael up the Yukon River and its tributaries as far as Dawson, affording passenger, mail, express and freight service between Dawson and St. Michael and intermediate points as well as all points reached by steamers on the Koyukuk, Iditarod, and Innoko rivers in Alaska. The last sailing from Seattle for up the river is not later than August 10th. The Yukon closes in the early fall.

BAGGAGE

The usual free allowance of 150 pounds of baggage on whole tickets and 75 pounds on half tickets is accorded by the steamships plying to and from Alaska.

Passengers entering Alaska from Canada are required to pass the customary United States Immigration inspection.

A similar requirement is made by the Canadian Government when passing from Alaska into Canada.

In either direction, the immigration authorities of both countries are very courteous, and do their work with a minimum of annoyance or inconvenience to tourists.

Passengers holding through tickets via Canadian Pacific R. R. and making Alaska side trip will be granted free storage

of baggage at steamship companies' wharves, at point of embarkation for not more than 30 days, after which regular charges will accrue.

Bonded baggage requirements vary, depending on the rail and ship lines traveled by the passenger.

Baggage checked from Vancouver or Victoria to Skagway will be inspected by United States Customs officers at Ketchikan or may be forwarded in bond.

Southbound, Canadian Customs baggage inspection is made at Prince Rupert, and United States Customs inspection at Vancouver (if passenger is traveling east via Canadian Pacific) or at Seattle.

Baggage can be checked through from Puget Sound and British Columbia ports to Atlin or Dawson via White Pass & Yukon Route, without inspection of customs officers at Skagway, provided passengers hold through tickets; and after it is once checked at starting point, passengers are not annoyed by inspection or re-checking until arrival at destination, where all baggage from the United States is subject to inspection.

Baggage originating at British Columbia points may be sealed and sent through Alaska in bond without inspection. The same privilege is accorded in the opposite direction.

LOCAL ALASKA STEAMER AND MOTOR BOAT SERVICE

Ketchikan to Prince of Wales Island, Hyder, and other local points.

Wrangell to Prince of Wales Island and other near-by localities.

Petersburg to the south end of Baranof Island.

Juneau, westerly to Sitka, and northerly to Skagway.

Valdez and Cordova to points on Prince William Sound.

The principal river service on the Yukon, Koyukuk, Innoko, and Iditarod rivers is handled by the White Pass & Yukon Route and its connections.

Fairbanks has a local fleet of about five steamers operating to near-by points on the Tanana River.

On the Iditarod River there is a local service of about six boats between Dishna and Iditarod.

On the Innoko River there is a local service of about three boats operating in the upper and shallow portions of the river.

The Kuskokwim River service is furnished by two steamers operated by the Alaska Rivers Navigation Company and the Kuskokwim Commercial Company.

A launch is scheduled to make monthly trips between Seward and Alaska Peninsula points via Kodiak.

Tramp transportation is furnished by small steamers and power boats to practically all new fields on tributaries of the Yukon. Fairbanks, Tanana, Ruby, and Iditarod are the principal headquarters. Two steamers are operated on the Stikine River between Wrangell, Alaska, and Telegraph Creek, B. C. Power launches operate on irregular schedules between Wrangell and various points on the river.

The Knik-Susitna Transportation Co. has been operating in past years at the head of Cook Inlet, Knik, Turnagain Arm and on the Susitna River, which is a tributary of Cook Inlet.

"The men of my age who are in this great audience will not be old before they see one of the greatest and most populous states of the entire Union in Alaska.

"I predict that Alaska within the next century will support as large a population as does the entire Scandinavian peninsula.

"I predict that you will see Alaska with her enormous resources of minerals, her fisheries and her possibilities that almost exceed belief, produce as hardy and vigorous a race as any part of America."

—THEODORE ROOSEVELT

Matanuska Branch

	Miles		Miles
Matanuska Junction.....	0	Sutton Station.....	19
Palmer Station.....	6	Granite Station.....	22
Moose Station.....	13	Castle Station.....	30
Junction Eska Spur.....	18	Chickaloon.....	37

Eska Branch

	Miles		Miles
Junction Matanuska Branch ...	0	Eska.....	3

RIVER ROUTES

YUKON RIVER—Whitehorse to St. Michael

	Miles		Miles
Whitehorse.....	0	Ruby.....	1,322
Dawson.....	460	Louden.....	1,378
Fortymile.....	512	Koyukuk.....	1,430
Eagle.....	561	NULATO.....	1,440
Nation.....	614	Kaltag.....	1,495
Circle.....	751	Anvik.....	1,655
Fort Yukon.....	836	HOLY CROSS.....	1,702
Beaver.....	888	Russian Mission.....	1,767
Fort Hamlin.....	983	Marshall.....	1,820
Rampart.....	1,079	Andreafsky.....	1,879
TANANA.....	1,159	Hamilton.....	1,933
Birches.....	1,214	Kotlik.....	1,993
Kokrines.....	1,298	St. Michael.....	2,060

TANANA RIVER—Tanana to Fairbanks

	Miles		Miles
Tanana.....	0	Nenana.....	198
Hot Springs.....	70	Chena.....	263
Tolovana.....	133	Fairbanks.....	275

KOYUKUK RIVER—Kaltag to Wiseman

	Miles		Miles
Kaltag.....	0	Alatna.....	470
Koyukuk.....	15	Bettles.....	540
Dagetkaket.....	175	Cold Foot.....	600
Hog River.....	315	Wiseman.....	620
Hughes.....	375		

INNOKO RIVER

Holy Cross, Yukon River to Diskaket, Innoko River.....	370
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INNOKO AND IDITAROD RIVERS—Holy Cross, Yukon River, to Iditarod

	Miles		Miles
Holy Cross.....	0	Dikeman.....	320
Mouth Iditarod River.....	160	Iditarod.....	395

KUSKOKWIM RIVER—Bethel to McGrath

	Miles		Miles
Bethel	0	Georgetown.....	260
Tuluksak.....	60	Sleitmutte.....	295
Yukon Portage.....	100	Andranoff.....	385
Kolmakof.....	190	McGrath.....	500

DAWSON YUKON TERRITORY TO

	Miles		Miles
Arlington Roadhouse.....	10.25	Gold Run, via Hunker, Summit and Ridge.....	38.93
Barker Creek.....	90.00	Gold Run, No. 27, via Ridge and Gold Run.....	44.00
Blackhills, Discovery.....	55.00	Gold Run, via Hunker, Summit, Green Gulch....	54.25
Bear Creek.....	7.33	Gordon's Landing.....	172.00
Bonanza.....	13.00	Henderson Creek, via Bo- nanza, Calder, etc.....	53.50
Bedrock Creek (Sixtymile) ..	65.00	Hunker Creek, Gold Bottom	18.30
Boucher.....	43.00	Hunker Creek, Discovery...	21.50
Caribou (Dominion).....	31.60	Hunker Creek, Head of....	26.35
Carmack's Forks.....	18.20	Indian River (via Calder)..	29.25
Clear Creek (Duncan Creek District).....		Last Chance.....	12.75
Dominion Creek, Dome, via Ridge.....	25.40	Miller Creek (Sixtymile) ..	61.50
" Upper Discovery... ..	28.50	Montana Creek.....	36.75
" Caribou.....	31.60	McQuesten.....	105.00
" Lower Discovery... ..	33.40	Quartz Creek, 12 below A. Mack's.....	28.10
" 7 below Lower.....	34.10	Steel Creek.....	36.75
" 92 below Lower... ..	40.60	Sulphur, 36 above Discovery	30.40
Granville.....	54.00	Sulphur, 2 below Discovery	34.06
Duncan Creek.....	184.00	Scroggie Creek.....	101.00
Eldorado, Head of.....	19.50	Victoria Gulch.....	16.50
Glacier Creek, Discovery... ..	58.25	Williams, Bonanza and Ridge	31.66
Gold Bottom.....	18.30		
Gold Run, Head of (via Ridge Wagon Rd.).....	35.75		

WHITE RIVER DISTRICT

Kluane Route

(Summer Route)

	Miles
From Whitehorse to Kluane (near upper end Lake Kluane) by Yukon Government wagon road.....	150
From Kluane to Jacquot's roadhouse (near lower end Lake Kluane) by trail.....	47
From Jacquot's roadhouse to Canyon City on White River, by trail..	85
From Canyon City to Pan Creek, by trail.....	17
From Canyon City to crossing of Beaver Creek, by International Boundary.....	15
From Pan Creek to mouth of Beaver Creek, by trail.....	42

DISTANCES IN GEOGRAPHICAL MILES

From Seattle via Inside Passage

	Miles		Miles
Ketchikan.....	742	Latouche.....	1,776
Wrangell.....	844	Seward.....	1,844
Petersburg.....	890	Anchorage.....	2,158
Thane.....	1,017	Seldovia.....	2,011
Treadwell.....	1,018	Homer.....	2,026
Douglas.....	1,019	Kodiak.....	2,183
Juneau.....	1,020	Chignik.....	2,504
Haines.....	1,122	Unga.....	2,648
Skagway.....	1,138	Sand Point.....	2,664
Cordova.....	1,581	Belkofsky.....	2,750
Ellamar.....	1,646	Unalaska.....	2,990
Valdez.....	1,674	Nushagak.....	3,500

DISTANCES IN GEOGRAPHICAL MILES

From Seattle Direct—Outside Passage

	Miles		Miles
Cordova.....	1,404	Bethel (Kuskokwim River)...	2,465
Valdez.....	1,435	Nome.....	2,621
Seward.....	1,418	St. Michael.....	2,623
Anchorage.....	1,656	St. Michael via Nome.....	2,741
Unalaska.....	1,962	Kewalik.....	3,087
Nushagak.....	2,385		

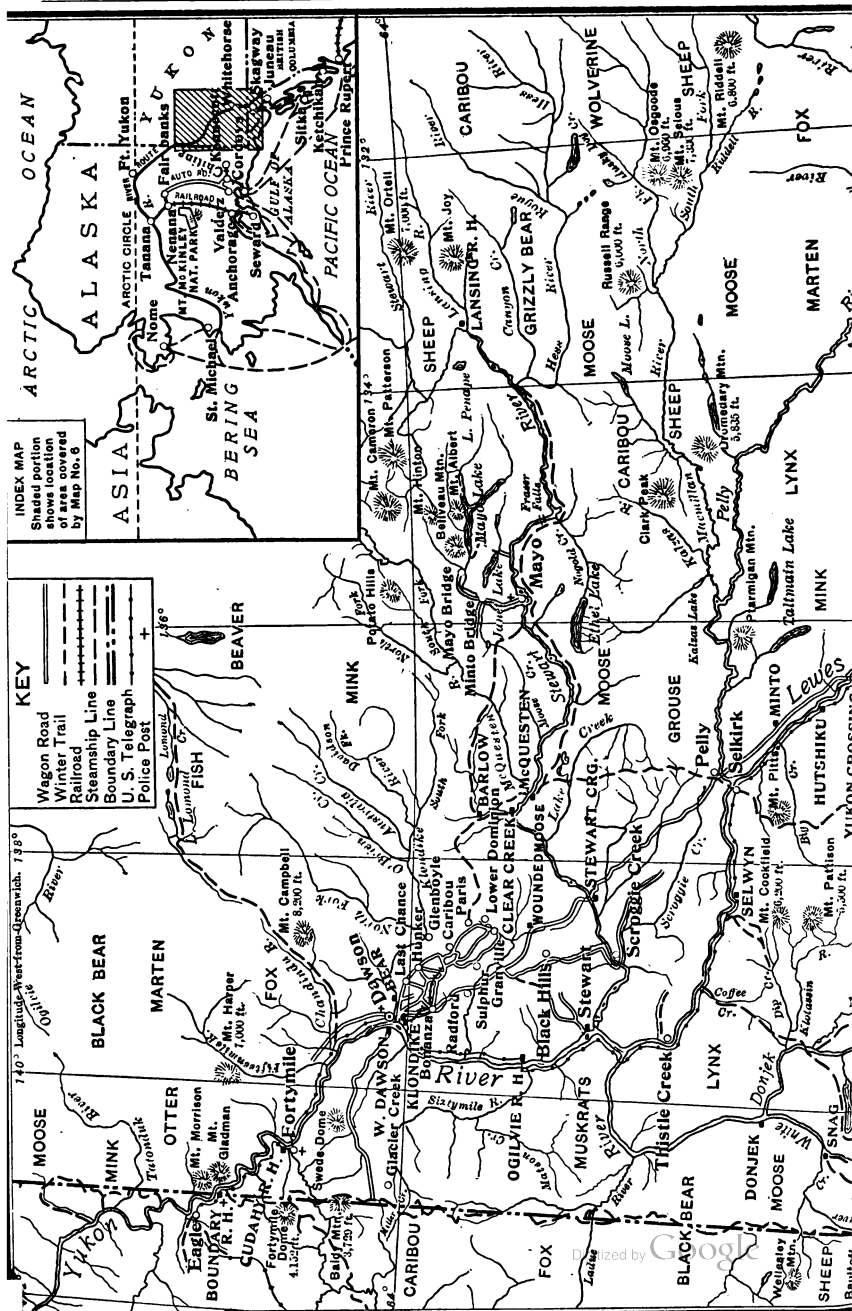
RAILROAD ROUTES

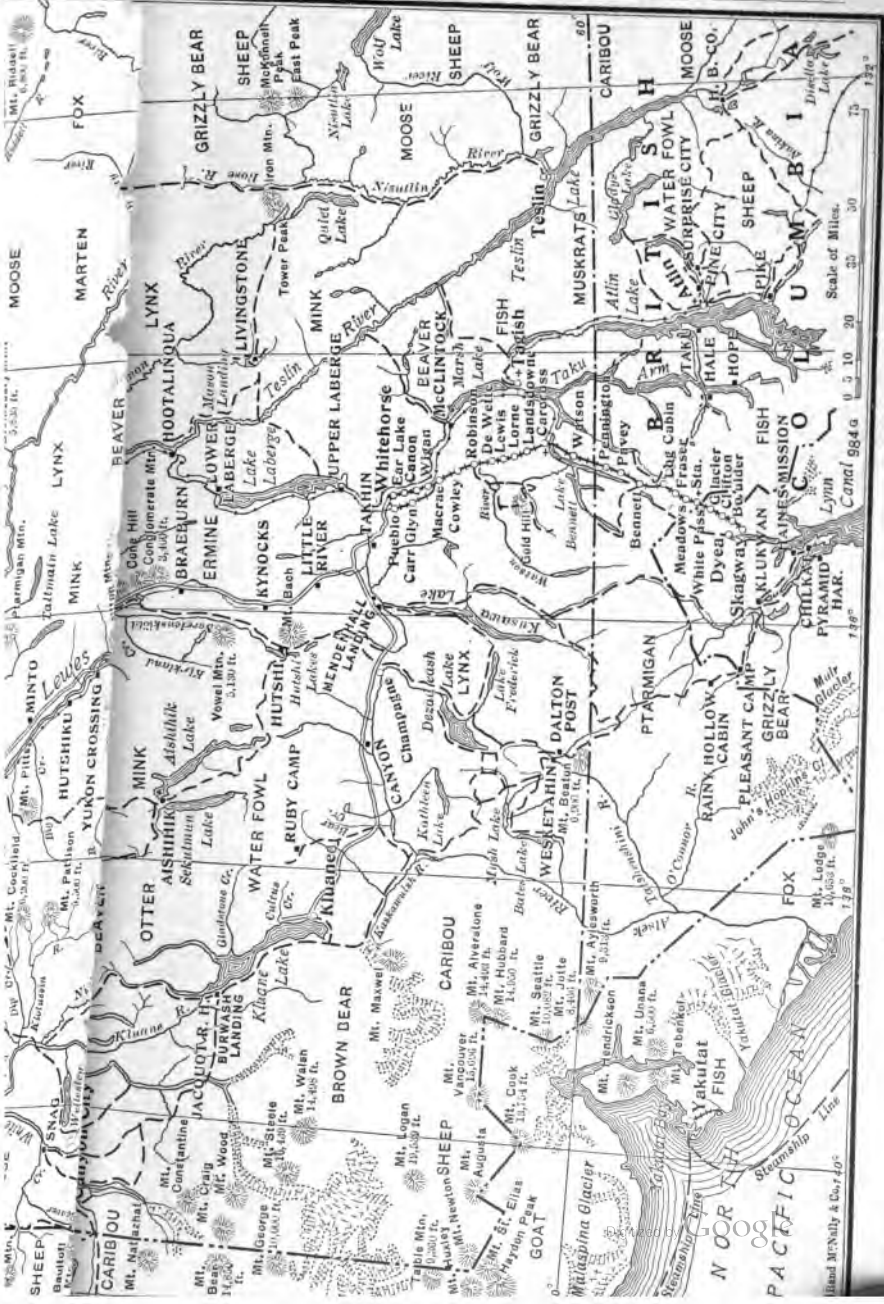
Skagway to Whitehorse—White Pass & Yukon R. R.

	Miles		Miles
Skagway.....	0	Bennett.....	40.6
White Pass.....	20.4	Carcross.....	67.2
Log Cabin.....	32.4	Whitehorse.....	110.4



Dogs with Packsaddles





Cordova to Kennecott—Copper River & Northwestern Ry.

	Miles		Miles
Cordova.....	0	Uranatina.....	113.7
Eyak River.....	5.9	Wood Canyon.....	124.4
Alaganik.....	22.2	CHITINA.....	130.7
Flag Point.....	26.2	Kotsina.....	137.0
Katalla Junction.....	38.5	Strelina.....	146.0
Miles Glacier.....	48.6	Chokosna.....	157.0
Abercrombie.....	54.6	Moose Lake.....	167.0
Baird River.....	66.9	Long Lake.....	177.0
Bremner.....	78.1	McCarthy.....	191.0
Cleave Creek.....	92.5	Kennecott.....	195.6
Tiekel.....	101.1		

U. S. GOVERNMENT ALASKA RAILROAD

Seward to Fairbanks

	Miles		Miles
Seward.....	0	Montana Station.....	209
Woodrow Station.....	7	Sunshine Station.....	215
Summit Station.....	12	Fishlake Station.....	221
Primrose Station.....	18	Talkeetna.....	227
Roosevelt Station.....	23	Nanchase Station.....	231
Trail Station.....	25	Cache Creek.....	238
Moose Pass Station.....	29	Lane Creek.....	242
Johnson Station.....	34	Dead Horse Hill.....	249
Hunter Station.....	40	Susitna River.....	264
Grandview Station.....	45	Chulitna Pass.....	276
Twentymile River.....	65	Hurricane Gulch.....	284
Kern Creek.....	71	Honolulu Creek.....	288
Girdwood Station.....	75	E. Fork Chulitna River.....	292
Bird Point Siding.....	82	Summit Br'd. Pass.....	310
Indian Station.....	89	Cantwell River.....	316
Rainbow Station.....	94	Windy Creek.....	323
Potter Creek Station.....	101	Bain Creek.....	327
Campbell Station.....	109	Clear Creek.....	330
Anchorage Station.....	114	Riley Creek.....	347
Whitney Station.....	119	Dry Creek.....	361
Eagle River Station.....	127	Nenana River.....	371
Birchwood Station.....	136	Nenana.....	411
Eklutna Station.....	142	Little Goldstream.....	420
Knik River.....	146	Goldstream.....	429
Matanuska River.....	148	Standard Creek.....	437
Matanuska Station.....	151	Cache Creek.....	445
Wasilla Station.....	160	Spinach Creek.....	451
Houston Station.....	175	Moose Creek.....	457
Nancy Station.....	181	Happy Station.....	460
Willow Station.....	186	Ester Siding.....	463
Kashwitna Station.....	194	Chena Junction.....	464
Caswell Station.....	202	Fairbanks.....	468

Fairbanks to Chatanika

	Miles		Miles
Fairbanks.....	0	Scrafford Station.....	26
Ester Siding.....	5	Ridgetop Station.....	29
Happy Station.....	7	Olness Station.....	34
McNears Station.....	11	Little Eldorado Station.....	37
Fox Station.....	18	Chatanika.....	39
more Station.....	20		

	Miles		Miles
part City.....	68	Mouth of White River.....	79.5
iggie, Mazie May &		Mouth of Donjek.....	159.5
arker.....	88	130 miles up White River ..	209.5
ar Creek.....		Mouth of Kluane River ..	224.5
son's Point & McQuesten ..	158	Kluane Lake, via Donjek,	
yo.....	230	etc.....	291.5
aser Falls.....	253	Selkirk.....	180
		MacMillan.....	254
		Glenlyon.....	345
		Ross River.....	427
		Hoole Canyon**.....	450

Head of navigation on the Pelly.

Distances from Dawson along the Whitehorse-Dawson Winter Trail.

	Miles		Miles
uartz (Tystad's).....	28.10	Carmack's.....	199.00
adian River.....	29.25	Nordenskold (1st crossing) ..	199.05
ureka Forks.....	43.00	Montague.....	223.00
ounded Moose.....	52.00	Chico Junction.....	228.00
tewart Crossing.....	77.00	McArthur Cut-off.....	242.60
osebud.....	87.00	Nordenskold (2d crossing) ..	243.00
tevens.....	99.00	Braeburn.....	244.60
osebud, Right Fork.....	109.00	Nordenskold (3d crossing) ..	251.60
ume's.....	114.00	Kynock (Nordenskold Post) ..	266.00
elkirk (Cut-off).....	134.00	Nordenskold (4th crossing) ..	275.75
Pelly Crossing.....	133.00	Little River.....	288.50
Minto.....	157.00	Tahkini River Crossing.....	307.00
Lewes Crossing (Mackay's) ..	178.00	Whitehorse.....	329.00

PRINCIPAL SUMMER AND WINTER ROADS AND TRAILS IN ALASKA

SUMMER ROADS

THROUGH ROUTES

Haines-International
Boundary.....48 miles

Mile 4—Hindustuki

22—Klukwan

25—Wells

28—Fish Point

39—Porcupine

48—Pleasant Camp

Wasilla-Willow Creek.....26 miles

Mile 11—Palmer Fork

17—Fishhook Inn

18—Archangel Fork

21—Kelly Fork

26—Willow Creek Pass

Circle-Miller House.....40 miles

Roosevelt-Kantishna.....34 miles

Ruby-Long.....30 miles

Ophir-Takotna.....24 miles

Nome-Council.....82 miles

Mile 4—Fort Davis

12—Cape Nome

22—Safety Ferry

32—Solomon

47—East Fork

72—Fox River

82—Council

Nome-Shelton (Dog Train) 87 miles

Valdez-Fairbanks.....370 miles

Mile 10—Comfort

19—Wortmans

27—Thompson Pass

33—Ptarmigan Drop

42—Beaver Dam

52—Tiekhell

63—Ernestine

81—Tonsina

92—WILLOW CREEK

102—Copper Center
 111—Taslina
 128—Gulkana
 140—Poplar Grove
 150—Sourdough
 162—Hogan
 166—Our Home
 175—Meiers
 191—Paxson
 208—Yost
 211—McCallum
 220—Millers
 233—Rapids
 245—DONNELLY
 262—Beale's Cache
 280—McCarty

292—Shaw Creek
 298—Tenderfoot
 301—Richardson
 313—Birch Lake
 314—DONNELLY
 321—Overland
 330—Munson
 342—Pile Driver
 352—18-Mile
 361—9-Mule
 370—FAIRBANKS
 Chitina Cut-off.....39 miles
 Mile 0—Willow Creek
 12—Kenny Lake
 24—Lower Tonsina
 38—Chitina

WINTER TRAILS

Chisana-Nizina.....78 miles
 Gulkana-Eagle.....357 miles
 Mile 0—Gulkana
 4—Gakona
 40—Chistochena
 90—Slana River
 131—Nicoleys Cabin
 156—Clearwater Cabin
 180—Tanana Crossing
 188—Lake Mansfield
 214—Lone Cabin
 235—Mitchells
 250—Ketchumstuk
 282—Chicken
 300—Jack Wade
 312—Steel Creek
 330—Liberty Cabin
 357—Eagle
 McCarty-Tanana Crossing .95 miles
 Circle-Fort Yukon.....125 miles
 Chatanika-Circle.....120 miles
 Mile 60—Eagle Creek
 80—Miller House
 100—Central House
 120—Circle
 Chatanika-Chandalar....195 miles
 Mile 120—Beaver
 195—Caro
 Dunbar-Fort Gibbon.....130 miles
 Mile 32—Minto
 52—Tolovana
 80—Hot Springs
 106—Fish Lake
 130—Fort Gibbon
 Nenana-Kantishna.....121 miles
 Mile 50—Knights
 104—Glacier
 114—Bartletts
 121—Kantishna

Fort Gibbon-Wiseman ...250 miles
 Mile 100—Arctic City
 120—Alatna
 160—Bettles
 235—Coldfoot
 250—Wiseman
 Fort Gibbon-Kaltag.....257 miles
 Mile 34—Kallend
 59—Nine-Mile Point..
 99—Ruby Hot Springs
 123—Ruby
 168—Louden
 210—Koyukuk
 222—Nulato
 257—Kaltag
 Ruby-Ophir.....153 miles
 Mile 30—Long
 56—Poorman
 81—Lone Mountain
 105—Cripple
 153—Ophir
 Nancy-Kaltag.....413 miles
 Mile 25—Susitna Station
 44—Lake View
 64—Squentna Crossing
 85—Mountain Climbers
 107—Happy River
 136—Pass Creek
 150—Richardson
 159—Roan River
 178—French Joe
 197—Peluk
 206—Sullivan Creek
 218—Solomon River
 235—Big River
 255—McGrath
 273—Takotna
 295—Ophir
 345—Dishkaket

413—Kaltag	Topkok-Candle.....154 miles
Ophir-Iditarod.....90 miles	Shelton-Candle.....140 miles
Takotna-Flat.....91 miles	Nome-Taylor.....140 miles
Mile 14—Big Creek	Nome-Teller.....90 miles
28—Halfway	Candle-Kiana.....65 miles
50—Moon Creek	Isaacs-Snyders.....85 miles
74—Ruby Creek	Unalaklik-St. Michael....65 mile
88—Otter	s
91—Flat	
Kaltag-Nome.....341 miles	St. Michael-Quinhagak...450 miles
Mile 60—Old Woman	Mile 60—Kotlik
90—Unalakleet	90—Fort Hamilton
112—Point Dexter	145—Andreafsky
195—Isaacs	167—Marshall
259—Cheenik	207—Bennetts
280—Bluff	225—Russian Mission
295—Topkok Head	325—Akiak
309—Solomon	350—Bethel
341—Nome	450—Quinhagak

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